'It's Important to Know In Time'

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Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

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Inside Dope

By George F. Taubeneck

Carl Windel In Key OPA Post

A great many oldtimers in the industry will remember Carl Windel, who entered the refrigeration business along about 1920, and served long terms with Kelvinator, Copeland, and Frigidaire.

He knows a great deal about the refrigeration business, especially the commercial end of it. All of which points up a piece of information which should enhearten all of us: Carl Windel is the commercial refrigeration specialist for the OPA. He's the man to see when you have a price problem.

In the earlier days of OPA this sort of thing would have been unthinkable. A man like Windel probably would never have been hired in the first place. But if he were taken into the OPA, he no doubt would have been given jurisdiction over Nylon stockings, sugar beets, and toy balloons.

It was the belief of the professors that any man who had been remotely connected with an industry should not be allowed any jurisdiction over it, because he probably would not "crack down" on it the way the flagellant profs desired.

You all have seen how that theory worked out.

We hope soon to present an article by Mr. Windel on what you can or cannot do in the matter of pricing new and used commercial refrigeration equipment. Carl isn't a lawyer; he's a refrigeration man. So, maybe we'll all know what the score is when his article comes out.

Fresh Out of OPA's

Carl tells a delightful story about a trip he took on a milk-run train in the South. At one whistle-stop he got off the train and dashed up to a tiny store to get some cigarettes.

"Got any Camels?" he asked the old proprietor.

"Yup. Twenty cents a package."

"Twenty cents?" yelped Carl. "Did you hear about OPA?"

"OPA?" The old man scratched his head. "Nope, can't say as I ever handled any OPA cigarettes. Want the Camels?"

Plenty of Materials

There's no question now about our materials supply. It has outrun our capacity to chew it up.

Aluminum will soon be in oversupply. Magnesium definitely is in oversupply. We're far better off as regards to tin, lead, zinc, chrome, tungsten, nickel, and copper than we ever thought we'd be.

That doesn't mean, however, that civilian production can be resumed on anything like an adequate scale. Right here is where you run smack into the tight labor situation. Also the facilities situation.

Take electric refrigerators, for example. The demand for fractional horsepower motors is so tremendous (in strictly war products) that it is doubtful if any could be spared for refrigerators in the next six months

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J. F. Nickerson Dies At 82

CHICAGO—J. F. Nickerson, "grand old man of refrigeration," died at his Chicago home Oct. 20, after six months illness, at the age of 82. He was buried Oct. 22 at Graceland cemetery, Chicago.

Born April 20, 1861, Mr. Nickerson entered the refrigeration publishing business in 1891. He was the publisher of "Ice and Refrigeration," "Merchandising Ice," and "Refrigeration Service Engineer."

Known and beloved by his industry for more than half a century, Mr. Nickerson was especially active in association activities. He was an officer and prime mover in the various ice associations, in the American Institute of Refrigeration, and in many kindred societies. He also fostered the Refrigeration Service Engineers Society.

Mr. Nickerson, with his white vandyke beard, his courtly manners, and his unflagging friendliness, was a familiar and respected figure at conventions and gatherings of refrigeration men everywhere. Until the last one (1936) he was a perennial American representative at the World Congress of Refrigeration. His passing will be mourned by thousands of friends throughout the industry.

Some Appliances In 1944—Dinegar

LOS ANGELES—Limited manufacture of household appliances may be resumed by next summer, according to a United Press dispatch from here Oct. 14, quoting Henry A. Dinegar, Chief of the Consumers Durable Goods Division of the Office of Civilian Requirements.

Mr. Dinegar did not specify what household appliances would be put on the market, the press dispatch stated.

Buchanan Named Head of Norge Muskegon Plant

DETROIT—John C. Buchanan, for nearly two years assistant plant manager, and the man largely responsible for the company's excellent war production, has been appointed plant manager of the Muskegon Heights plant of Norge Division of the Borg-Warner Corp., it is announced by Howard E. Blood, Norge president and geenral manager. Mr. Buchanan succeeds Harry L. Spencer, resigned.

After graduating from the University of California in mechanical engineering, Mr Buchanan became general superintendent of fabrication for the Aluminum Products Co., in Los Angeles. Later, he came East to join the Chrysler Corp. in the tool inspection division. He also served as engineer in charge of the experimental division of Murray Body Corp. Coming to Norge from Murray, Mr. Buchanan was chief engineer of electric refrigeration until his assignment as assistant plant manager in 1941.

Cowan Elected Officer Of Export Firm

NEW YORK CITY—J. W. Cowan has been elected vice president of Ad. Auriema, Inc., manufacturers' export managing firm here. Mr. Cowan came to the firm in 1941 from Carrier Corp.'s International Division. He has traveled in Africa, Asia, and the Caribbean.

Program Set For Industry Meeting At French Lick

PITTSBURGH—Present and postwar problems of the refrigeration equipment industry will get a thorough airing at the fall refrigeration conference Thursday and Friday, Oct. 28-29, at French Lick Springs hotel, Indiana, the conference being held in conjunction with the meetings of the Refrigeration Equipment Manufacturers Association and the National Refrigeration Supply Jobbers Association.

At the open joint meeting on Friday, Oct. 29 the meeting will be called to order by R. H. Luscombe, Penn Electric Switch Co., president of Rema. John Wyllie, Jr., president of the National Refrigeration War Council, is scheduled to report on the work of the Council, especially with reference to such matters as (a) temporary deferment of service engineers; (b) problem of training classes for recruiting and training service engineers; (c) future work of the Council.

H. B. McCoy, Chief, Division of Industrial Economy, Department of Commerce, is to speak on "Government Agencies' Postwar Planning Program."

The Friday sessions will also hear from Sterling Smith, Chief, Refrigeration and Air Conditioning Section, War Production Board, on "Will WPB or OCS Be Able to Assure Our Industry More Parts for Maintenance and Repair?"

H. W. Small, The Thermal Co., St. Paul, Minn., is to talk on the subject "The Postwar Jobber" covering such points as (a) new types of jobbers; (b) training the engineering salesmen; (c) promotional plans and manufacturer helps.

"Policies of the Wholesale and Retail Trades Division of WPB" is the topic of a talk to be given by Sterling A. Warren, Acting Chief, Wholesale and Retail Trade Division, WPB.

A. B. Schellenberg, Alco Valve Co., St. Louis, will talk on "Accomplishments of the Industry Advisory Committee." Mr. Schellenberg is a member of the committee.

With Mr. Luscombe acting as moderator, a symposium will close the session, with the following points being debated:

1. What effect will the liquidation of surplus war stocks have on our industry?

2. Will civilians — assuming that the war continues during 1944—be able in 1944 to purchase more or less refrigeration equipment?

3. Are rating patterns for refrig-

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Grove Leaves Hotpoint For Agency Position

CHICAGO—W. A. "Art" Grove, for 15 years director of advertising and sales promotion, Edison General Electric Appliance Co., (Hotpoint), Chicago, has joined the firm of Addison Lewis & Associates, Minneapolis advertising agency, as an account executive for Minneapolis - Honeywell Regulator Co. and other accounts.

Before going with Hotpoint, Mr. Grove was connected with the Curtis Publishing Co., as advertising sales representative for the "Saturday Evening Post" in Chicago office territory.

"Art" Grove is widely known throughout the home appliance industry because of his active participation in association and industry promotional activities. He has twice served as chairman of the Plan Committee of the Modern Kitchen Bureau and for five years was chairman of the Advertising Committee of the Electric Range Section of NEMA.

He is also a former director and vice-chairman of the Association of National Advertisers.

Government Agencies To Aid Deferment & Training Program

Employers Should Demand Processing of Draft Cases Under 115B

DETROIT — Many refrigeration servicemen are being inducted into the armed forces unnecessarily because they are not following proper procedure in requesting proper handling of their cases in line with recent directives and memorandums issued by the War Manpower Commission and Selective Service Headquarters—particularly Local Selective Service Memoradum 115B.

The refrigeration serviceman who is notified by his Local Selective Service Board that he has been classified 1A or who gets an order to report for induction should have his employer address the Local Selective Service Board as follows:

Local Draft Board No.
(Street Address)
(City and State)
Gentlemen:

This is to certify that (Employe's Name and Draft Order Number) is a full qualified refrigeration repairman and is devoting his full time to the maintenance of refrigeration equipment.

We, therefore, request that your Board process this case in accordance with Local Selective Service Memorandum 115B.

(Signature of Employer)

If the Local Draft Board does not process the case in accordance with Memorandum 115B (that is, if they order induction or if a check with them shows they are ignoring it) the employer should immediately call the

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Kromer Set To Go With Program of Training By Industry Men

WASHINGTON, D. C.—In a two-day session here late last month with government officials, including Arthur Whiteside, director of the Office of Civilian Requirements, the National Refrigeration Service Manpower Committee submitted recommendations for getting further consideration for the deferment of refrigeration servicemen, and got machinery in motion for the start of an overall training program for servicemen.

Members of the committee who attended the two day meeting included L. A. Tucker, J. J. Pocock, Inc., Philadelphia (chairman); Thomas Walker, president, Council of Electric Operating Companies, Washington, D. C.; Warren W. Farr, Cleveland; W. R. Kromer, Oil Heating Devices, Inc., Cleveland; Nathan Edelstein, New York City; John Bartlett, Electrical Institute, Washington, D. C.; E. A. Pleskott, St. Louis, national president, Refrigeration Service Engineers Society; C. E. Harris, Harris Refrigeration Co., Cambridge, Mass.

Mr. Kromer was named by the committee to act as a liaison man with J. J. Tessari, Chief of the Division of Industrial and Vocational Training, Bureau of Training, War Manpower Commission, to work out a plan for a training program, as Mr. Kromer has had experience in setting up a program in Cleveland.

"Ray" Kromer, the Cleveland dealer-service contractor who has played a leading role in the fight for an overall solution to the refrigeration service manpower problem, beginning with the committee he helped to form in Cleveland, is serving as industry consultant to the War Manpower Commission and it will be his job to get much-needed cooperation from local groups within the industry to put over the training program.

To Kromer's way of thinking, the initial training program should be completed by April, 1944 at the latest so that the first crop of trainees will be available for the "rush" season on refrigeration service.

This is what the War Manpower Commission, working with various government agencies, will do for the refrigeration service manpower training program:

1. Enlist the aid of the various state vocational training setups to provide places of instruction, textbooks, and whatever helps they may have available.

2. To provide funds to pay for the instruction.

3. Enlist the assistance of the United States Employment Service in finding and referring trainees to the course of instruction.

The job of the refrigeration industry itself in this training program, says Mr. Kromer, will be primarily to furnish the instructors to direct the training. This will mean men who will be willing to give their services two or three nights a week over the several weeks that the course will take to complete.

Further than this, local industry groups must be formed to support the program, says Mr. Kromer, by assisting in finding and fitting places of instruction, getting trainees, getting publicity for the program, and backing it in every way possible. Individual employers of servicemen must possibly also be ready to take on the trainees for full or part-time work in their shops during the training period.

Mr. Kromer plans to appoint a number of "field coordinators" consisting of industry men who will push the program along in various areas. He is making plans for de-

(Concluded on Page 2, Column 1)

Treasury Drops Plan To Hold Commissions At Last Year Levels

WASHINGTON, D. C. — Commission of Internal Revenue Guy Helvering has announced that employers of salesmen may pay all commissions earned in September and October provided their rate of commission and "other compensation" had not been increased since Oct. 2, 1942.

This is interpreted by business as an order for employers of salesmen to ignore, for the time being at least, the new bureau rule of Sept. 4 requiring that applications be made for payment of commissions in excess of those paid in the preceding year, in the case of salesmen making more than $5,000 a year.

Commissioner Helvering said an announcement would be made as soon as possible about what the rules will be after this month.

Under the Treasury Department's original order, issued last Dec. 2, business concerns were permitted without obtaining approval, to pay commissions totaling more than the year before provided the commission rate was not increased. Under the regulations of the War Labor Board, which is responsible for the stabilization of commissions under $5,000, this procedure still is permitted.

It was said that Commissioner Helvering's announcement was made following a meeting on the matter in Washington, at which the Treasury officials admitted it would be impossible to handle the deluge of applications if approval were required in all cases where commissions totaled more than last year.

It was indicated that a modified order, perhaps requiring approval only on increased commissions amounting to more than $25,000, might be issued.

Service Manpower Committee Requests Wage Equalization

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voting much time in personally checking with the progress of the program in various areas, and when Mr. Kromer talks about making "flying trips" for such missions he is speaking literally, for he flys his own airplane and the WMC is said to have given approval for this mode of travel in the interests of the program.

In their discussion with Mr. Whiteside, the committee members brought up four major points on which assistance is needed from the government if refrigeration manpower is to be successfully conserved. These points are:

What Committee Asked of Gov't

1. Another telegram should be sent to the local draft boards so that they do not "misinterpret" the Oct. 1 deadline in the telegram sent out by Maj. Gen. Hershey last summer to mean that servicemen should no longer be deferred.

2. Immediate adoption by the U. S. Employment Service of the considerations that must be given refrigeration servicemen by virtue of their being on the List of Critical Occupations issued by the War Manpower Commission.

3. Granting of wage increases to the refrigeration service trade by the War Labor Board to hold present servicemen in their jobs, and also to encourage trainees to get into the field. Three wage-group classifications were suggested: (1) trainee; (2) helper; (3) experienced serviceman.

4. An increase in OPA ceiling prices on service work, so that service contractors would be enabled to pay higher wage scales.

Officials of the OCR were said to be willing to help realize this 4-point program by facilitating negotiations with other government agencies concerned.

On the first day of the committee meeting it was brought out that something must be done immediately to impress more forcibly upon local draft boards the critical need for refrigeration servicemen.

Require 2 Years Experience

Draft boards will require that a serviceman show at least two years' experience in order to qualify for consideration for occupational deferment under the terms of the List of Critical Occupations order. In many cases, it was reported, the local boards refuse to consider deferment at all if the man is within the 18-to-25 age group. If this trend of taking the 18-to-25 men despite their qualified employment in this critical occupation is continued, it would seriously deplete the ranks of the industry.

As for the training program, the committee expressed a belief that the government agencies should help by assisting in the recruiting of trainees, furnishing of training facilities, and subsidizing salaries for beginners. The industry should furnish the instructors, it was thought.

Some of the committee members voiced the protest that local offices of the War Manpower Commission and U.S.E.S. had little knowledge of the fact that refrigeration service was a "super-critical" occupation and were given little or no help on the problems of the service contractors in their territory.

To 'Interpret' In the Field

To this Richard H. Keatinge of the Consumers Durable Goods Branch of the Office of Civilian Requirements declared that field representatives of the Office of Civilian Requirements would be sent out to help War Manpower Commission and WPB local officials interpret regulations and policies for the protection of essential civilian activities.

Mr. Tucker appointed Mr. Farr and Mr. Kromer to formulate a resolution to be sent to Webster Powell, Acting Chief, Manpower Branch, OCR, requesting further specific deferment for servicemen after Oct. 1, preferably in the form of another telegram from Maj. Gen. Hershey to local draft boards.

On Wage Increases

H. M. Douty of the War Labor Board met with the committee and explained that the following wage increases can be given without W.L.B. approval:

1. In companies with less than nine employes, not counting corporation executives.

2. Under WLB General Order 30, no WLB approval is needed to raise wages up to 40 cents an hour.

3. Merit increases, incentive wards, seniority increases, upgrading of apprentices, and bona fide promotions are permitted for industrial workers, without WLB approval, if they are in accordance with the appropriate provisions of definitely established wage schedules in effect before the Wage Stabilization program.

4. Wage plans and incentive systems must be submitted for WLB approval if they have been set up since the establishment of the Wage Stabilization Program.

Increases needing WLB approval include those under the "Little Steel" formula (men not having had a general wage increase since Jan. 1, 1941) may get a 15% increase.

Another type of wage increase needing approval is one wherein special wage brackets are set up, by occupation and in local labor areas, to take care of gross inequities.

Considerable discussion was held on this latter method, but the committee members felt that such a method would not be helpful in holding and getting refrigeration service manpower. What is needed, the committee declared, is some national program which would give the refrigeration service field a salary scale that would enable it to compete for workers in the war boom industries.

Applying Memorandum 115B

Lt. Col. K. D. Pulcipher of Selective Service explained "Local Board Memorandum 115B" to the committee. This is an adjunct to Memorandum 115, which lists the critical occupations for which specifical consideration on deferments is asked because (1) of the great amount of skill and experience necessary and (2) explains the shortage of manpower available for these activities.

Under Local Board Memorandum 115B, the local boards must, in the case of a man who has been classified 1-A, refer the man's case to the local U.S.E.S. office if he is in one of the critical occupations.

The registrant must be given a 30-day stay of induction, and in this period the U.S.E.S. must report to the local board whether this skill is being used in the registrant's present employment for the war effort.

Training Classes In 32 States Teach Auto Repairmen

WASHINGTON, D. C.—Vocational training classes in automotive maintenance, designed to assure a continuing supply of trained workers to maintain present equipment, have been established in 32 states and the District of Columbia, the Office of Defense Transportation has announced.

Cities and towns scattered over the country are now undertaking to solve the problem of replacing automobile mechanics who have entered the armed services or war industries by organizing local vocational training schools, under the guidance of the ODT and the local maintenance advisory committees, in cooperation with the Office of Education and the War Manpower Commission.

With the country's reserve of new motor truck equipment now practically depleted, and with scant replacements of vehicles due to military requirements, it is imperative that the motor transport industry "keep 'em rolling," the ODT emphasized.

Through the 142 district offices of its Division of Motor Transport, the ODT has organized Maintenance Advisory Committees composed of local citizens representing every field of motor transport in their communities.

In Memphis, Tenn., the Maintenance Advisory Committee last May inaugurated classes in automotive maintenance, utilizing local vocational training facilities, and these have proved so successful that similar courses of study have been extended throughout the country.

The progress of the Memphis trial course was closely followed by government sponsors during June, and the following month the idea was put into effect in many other states.

During July, August and September, classes in automotive mechanics were opened in 72 cities and are now turning out workers trained in at least one class of necessary maintenance work. Twenty-five more cities have completed arrangements and will soon start recruiting for schools in their communities.

New and untrained personnel, both men and women, are instructed in one or more types of maintenance work, being paid during the training period by local industry needing such labor.

Draft Boards Should Be Told To Process Cases Under 115B

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matter to the attention of State Selective Headquarters.

All communications to the Local Selective Service Headquarters or with the State Selective Headquarters, if done by mail, should be done by registered mail, so that the action taken will be on record.

This above procedure is recommended by a man in the industry who has been in recent contact with War Manpower Commission and Selective Service Headquarters in Washington, and who has applied the procedure correctly and successfully in half a dozen cases.

Under the terms of Memorandum 115B, governing cases of men who are in one of the 149 "super-critical" occupations recently listed by the War Manpower Commission, the local board must refer every case of a registrant in one of these classifications who requests occupational deferment to the U. S. Employment Service nearest office.

The U.S.E.S. must report to the local board within 30 days as to whether the registrant is using his highest skill in his present occupation, and whether this skill is being used for War Production or in support of the War Effort.

If the U.S.E.S. does report that the registrant is using his skill in a "super-critical" occupation it is not binding on the board to defer him, but Selective Service has advised its local boards as follows:

"It is of the utmost importance that registrants (1) who have the necessary qualifications, (2) who are utilizing them to the fullest extent in a critical occupation in war production or in support of the war effort, and (3) whose removal from their present employment would have an adverse effect upon the maintenance of required production schedules, be given the most serious consideration for extended occupational deferment being reclassified out of a deferred classification into a class available for service."

In all such cases, according to memorandum 115B, the local board is bound to delay issuance of an order to report for induction for 30 days from the date of referral to the United States Employment Service.

The important thing to remember, according to the man recommending this procedure, is that if the local board refuses to recognize Memoradum 115B as being binding upon them, to take the matter quickly and directly to the State Selective Service Headquarters, not to the registrant's appeal board.

'Reefer' Ships Are Specially Designed For Frozen Foods

OAKLAND, Calif.—Six new C-2 type freighters built at the Moore Drydock Co. in Oakland, have been converted to refrigerated "reefers" and are now in service carrying frozen meat for Allied forces abroad, according to engineers of the York Corp., in charge of the refrigeration work.

The six vessels, all designed by the Maritime Commission for permanent use after the war, have a displacement of nearly 14,000 tons and a gross cargo volume of 502,000 cubic feet each. The cargo space is divided into two separately insulated cargo spaces which together have 14 compartments, each compartment being maintained at a minimum temperature of 15 degrees.

The ships selected for conversion by Maritime Commission were actually in the water or far advanced on the construction ways when the conversion program was adopted. Efficiency of the general design made it possible to convert with only minor hull changes.

Centrifugal refrigerating machinery operated directly by its own steam turbines from the ships' steam boilers has been installed to provide necessary flexibility and to conserve shipping space and weight, York engineers explain. This is the first time cargo vessels have been equipped with centrifugal compressors for cargo refrigeration.

This type of refrigeration has been used previously on shipboard only to a limited extent on luxury liners for comfort cooling. Two compressors are installed on each ship, to provide the maximum amount of refrigeration needed, one of which is a spare.

Under the present design of the vessels, only frozen foods or precooled cargoes can be carried. Although refrigerating machinery is adequate to carry the heat load created by such products as fresh vegetables or fruits at field temperature, the air cooling surface in the various holds would make the rapid temperature drop impractical. Frozen meat on the ships is to be loaded at a temperature not above 25° F. and is maintained at about 15° F. or less.

Refrigerated Transport Proposed as Aid To Nova Scotia Fishermen

HALIFAX, Nova Scotia—Refrigerator trucks may come to the rescue of Nova Scotia's many inshore fishermen.

For years now, the small-boat fishermen in Nova Scotia have been beset with the problem of how to transport small catches of fresh fish to ports where cold storage and processing plants are available.

Now it's suggested by H. G. Connor of Halifax, president of Maritime-National Fish, Ltd., that a regular refrigerator truck service be provided for these fishermen. Connor makes his recommendation in a brief presented by a Royal Commission on Provincial Development and Rehabilitation.

Connor's brief is titled, "Post-war fishing industry in Nova Scotia." In it, he says that the principal problem in the past has been to market profitably the catch of the small-boat fishermen located in villages throughout Nova Scotia.

The solution outlined in the brief is simple. Nova Scotia would be divided into several zones of production. And a regular refrigerator truck service would operate three days a week in these zones. Thus, says Connor, the inshore fishermen could dispose of their catches at plants in North Sydney, Canso, Halifax, Lunenburg, Liverpool, Lockeport, Shelburne, Yarmouth and Digby.

"By this method," says Connor, "The fishermen at all fishing ports in Nova Scotia would receive the same prices for their fish as would prevail at the ports where plants are established."

Connor recommends that the expense of the truck service be borne by the Nova Scotia government. He says the irregularity of the small-boat catch would make it uneconomical for private firms.

Pros & Cons Given on 'When' Of Civilian Goods Production

May Await Drop In War Employment

WASHINGTON, D. C.—Production of more civilian goods is now possible, believe some government authorities here.

Two reasons for this hope are given:

(1) The tremendous task of building or converting factories to war production is complete and overall production is proceeding well so that schedules originally set up for some types of military and naval equipment can be cut to fit more exactly actual requirements.

(2) Advanced state of war operations, especially in Europe permits military planners to estimate their future needs more accurately, thus making possible the elimination of projected war production that is deemed unnecessary.

Government thinking tends towards opposing the mass shifting of workers from areas of little war production to areas needing manpower. Perhaps, it is said, civilian goods production will be resumed in localities that will possess a surplus of labor when war production is reduced or eliminated there.

Perhaps some six or eight billion dollars may be trimmed off the hundred billion dollar production program planned for 1944, one expert says, pointing out, however, that the President's War Mobilization Board would be chiefly responsible for making any such readjustment.

Even if such a cut in military requirements were made, however, the actual production of more civilian goods is problematical. Certainly, nothing would be permitted to interfere with munitions manufacture.

Nonetheless, a committee to dovetail production into the strategy of war has been set up, at the direction of President Roosevelt, by Gen. George C. Marshall, Admiral Ernest J. King, and Admiral William D. Leahy.

And James F. Byrnes, war mobilization chief, is said to be starting an exhaustive study of industrial demobilization and related postwar problems in preparation for establishing a demobilization program.

One should not be too optimistic about the prospects of immediate increases in civilian production, these experts caution, citing two instances in which production of certain war materials was drastically slashed only to be replaced by other military work.

The Navy, for example, recently cut construction of new escort ships because it has, or will have soon, enough vessels of that type to combat successfully the submarine menace. The shipyards and workers, however, are now building landing craft instead.

Tank production has taken a big drop, but the steel is going into Navy ships, not civilian products.

Chicago Drive For Old Appliances Opens

CHICAGO—A city-wide campaign has been launched in Chicago and adjacent communities to unearth and recondition idle electric household appliances for resale to Chicago families now unable to obtain such devices because of wartime manufacturing restrictions, it is announced by the Commonwealth Edison Co.

The drive will be centered around a broad-gauge newspaper advertising program Oct. 18, which will urge the consuming public to "swap" out-of-service or discarded electrical conveniences, regardless of age or condition, for war stamps at stores participating in the plan.

The dealers will make any necessary repairs in their own shops and offer the appliances for resale.

This swap campaign came as the result of a War Production Board appeal to public utilities, enlisting their aid in ferreting out and redistributing millions of castoff electrical appliances.

Fish Frozen on the Fly Would Cost Him 6 Cents a Pound More, Prof. Bull Told

CHICAGO — Several questions of fact on the probable cost of refrigerated air freight in the postwar era as presented by Prof. Sleeter Bull before the recent National Frozen Food Locker Assn. convention have been raised by W. D. Jordan, director, Research and Planning Committee of the Liquid Carbonic Corp. here.

In a letter addressed to Prof. Bull the following points are raised by Mr. Jordan:

"Dear Prof. Bull:

"The Oct. 11 issue of AIR CONDITIONING & REFRIGERATION NEWS carries an article commenting on and excerpting from your speech at the recent convention of the National Frozen Food Locker Assn.

"It would appear that you may have made an error in calculating the cost of shipping food products in cargo planes. Your cost figure of 14 cents per ton mile is probably about right for a large cargo plane but on that basis it would cost $7 per hundred instead of 70 cents per hundred to ship your ton of fish from Boston to Champaign since 14 cents x 1,000 miles = $140 per ton.

"On that basis one can pay the local processing plant two cents per pound for packing and freezing, pay the New York Central the $1.32½ for hauling the fish to Champaign and deliver the fish for less than half the cost of shipping by air.

"Moreover, it seems doubtful that a cargo plane which will carry 30 tons will fly economically in the stratosphere. The Flying Fortress weighs 30 tons but carries only four or five tons of bombs and crew. The ratio of horsepower to weight is extremely high in all planes flying in high altitudes, which would seem to rule them out as economical cargo carriers.

"On the other hand, a cargo plane which is capable of carrying a relatively large pay load at 200 miles per hour does not cruise at an altitude which will afford quick freezing temperature.

"It seems doubtful that air freight or express rates will ever be competitive with the rates on rail freight and express. A cargo plane which will carry even 10 tons requires more horsepower than the diesel powered twin unit locomotive which pulls a 15 or 18-car pullman train at 100 miles per hour. If those 18 cars were express cars instead of pullman cars, with only 10 tons of express in each car, you could move 180 tons of pay load by rail with less horsepower than is required for the 10 tons by plane.

"It is true that the cargo plane can haul the fish from Boston to Champaign in less time than the same cargo can be hauled by rail. However, if the railroad should offer streamlined express trains operating on schedules comparable to the streamlined passenger trains, you could ship your fish from Boston to Champaign by rail in 20 hours against about seven hours by plane, allowing for stops in principal cities in both schedules.

"It occurs to me that your fellow-residents of Champaign would have to be very hungry for fish to be willing to pay the $7 per hundred instead of $1.32½, just for the sake of getting delivery 12 or 13 hours earlier.

"I am very fond of fish but I would prefer to pay six cents per pound less and eat them the next day or perhaps have them for breakfast instead of dinner.

"Seriously, I am entirely in accord with the idea that large quantities of goods will be transported by cargo plane after the war. However, it is my belief that the cost of moving freight or express by air will always be very much higher than for moving the same cargo by rail and I believe the public is being fed too much optimistic propaganda on postwar air transportation.

"Yours very truly,

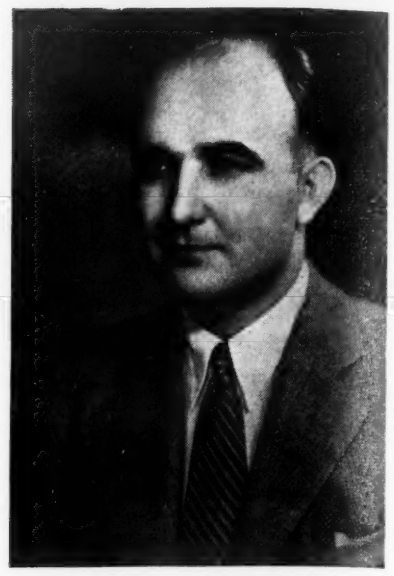
"W. L. Jordan, Director,
"Research and Planning Committee."

Calif. Locker Operator Starts Another Plant

TAFT, Calif.—J. B. Moore, owner and operator of a locker plant in Avenal, Calif., will build and operate another locker plant in Taft, Calif., to cover an area of 65 x 44 feet and to be in operation about the middle of November, providing commercial storage wells and 1,000 lockers of various sizes for families and restaurants.

In New Executive Posts at Servel, Inc.

NORTH I. TOWNSEND



HARRY NEWCOMB

RUDOLPH SCHNAKENBURG

W. F. HASSEE

* * *

In administrative changes announced by Servel, Inc., last month Harry Newcomb, formerly vice president in charge of the company's electric refrigeration and gas water heat divisions, becomes vice president and assistant to the president and North I. Townsend becomes vice president in charge of finance. Rudolph Schnakenburg, formerly comptroller, becomes secretary and treasurer. W. F. Hassee, formerly chief accountant, is the new comptroller. Henry O. Roberts, personnel director, assumes responsibility for the personnel administration of all the divisions of the company.

HENRY O. ROBERTS

The Priorities Quiz

(Air Conditioning & Refrigeration News, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

Allotment Symbols on Orders Helps Producers

Q. Will you explain the recent WPB announcement that it is now mandatory to place CMP allotment symbols on some types of orders?

A. The War Production Board has decided that where a distributor places an order with a preference rating on a manufacturer asking for direct delivery to the distributor's customer, the distributor must put the allotment number which appears on his customer's order on the distributor's order to the manufacturer.

There still is no rule making it compulsory for a distributor to place allotment numbers on his orders to manufacturers for delivery to the distributor; however, it is very helpful to the manufacturer to have distributors place these allotment symbols on all orders. These allotment symbols are used by the manufacturer in support of his application to the War Production Board for raw materials required in his production.

The best rule to follow is to show allotment symbols on every order.

Customers Not Producers, Can Re-rate Under P-126

Q. Under the revised P-126 order, a preference rating of AA-2 is now being assigned where a rating of AA-4 was formerly available. Are manufacturers permitted to automatically rerate to AA-2 unfilled orders from their customers which carry the AA-4 rating under P-126 before revision?

A. The Administration of P-126 said in Washington this week that he had discussed this question with the legal division and that as the order now reads, manufacturers may not rerate these orders. These orders may be rerated, however, by the customers who placed the orders provided that delivery and acceptance of the material specified conforms with the conditions under new P-126 —particularly, the "largest inventory allowed" provision which limits an inventory to a 60-day supply.

Service agencies, jobbers, and other distributors should, therefore, review at once all of their unfilled purchase orders and wherever possible authorize their supplier to use the AA-2 rating in place of the present AA-4. Otherwise, suppliers have no alternative but to ship more recent orders rated AA-2 under the revised P-126 ahead of old orders rated AA-4 under the terms of P-126 before revision. Priorities Regulation No. 1 still compels shipment to be made strictly in order of preference rating.

Metals Recovery Agency Changes in Process

Q. There have been several announcements stating that the Recovery Corporations are being liquidated. Can you advise us the present status of this matter and what will happen to all of the records now in the possession of those groups regarding idle and excessive inventories?

A. The Steel Recovery Corporation is scheduled to be disbanded Nov. 1. According to the War Production Board their catalogs will be transfrered to the 12 regional WPB offices and further reports of additional idle inventory will be made through the regional offices.

The Copper Recovery Corp. and the Aluminum Recovery Corp. are both scheduled to remain in existence for some time. However, after Nov. 1, reports on additional idle inventory are to be made through the regional War Production Board offices and will be reflected by them to the Copper Recovery Corp. Both Copper Recovery and Aluminum Recovery Corp., however, are scheduled for liquidation in the near future. Eventually, the Redistribution Division of the Materials Branch of each regional War Production Board office will handle the report and sale of idle and excessive inventories.

Small Producers To Get Full-Year Allotments

Q. How is the decentralization now going on in the War Production Board affecting the Controlled Materials Plan?

A. Beginning with the first quarter, the War Production Board plans on handing out allotments for a full year to approximately two-thirds of all applicants. A recent WPB survey disclosed that the bulk of the material being allocated was distributed to the larger producers who constituted about one-third of the number of applicants.

By passing out the full year's requirements to the smaller producers, the actual processing done by the WPB will be cut nearly in half. This will result in a great saving of time and personnel.

Irving Wilson Joins Superior Valve Co.

IRVING A. WILSON

PITTSBURGH, Pa. — Irving A. Wilson, for many years connected with the refrigeration industry and recently returned from East Africa where he installed refrigeration equipment for the Army, has joined Superior Valve & Fittings Co. as a sales engineer.

Mr. Wilson will handle contacts in western Pennsylvania, western New York, West Virginia, eastern Kentucky, Ohio, eastern Michigan, and the provinces of Ontario and Quebec, Canada, announced K. M. Newcum, vice president and sales manager.

Mr. Wilson spent nearly a year—from May, 1942 to April, 1943—in East Africa for the Douglas Aircraft Corp. as a refrigeration technician. He installed and maintained refrigeration equipment in one of the Army camps being constructed there.

Unnatural Conditions of Indoor Firing Range Conquered by Air Conditioning

Heat Was 'Washing Out' Air Gunnery Trainees

PANAMA CITY, Fla. — When a newspaper reports that a Flying Fortress returned safely from a bombing raid by shooting down half a dozen attacking Nazi fighters, the chances are that air conditioning played a large role in the Fortress' gunner's shooting accuracy.

One of the most important steps in training aerial gunners is teaching them to "lead" the target by many feet when a fighter knifes down on their ships. At 300 miles or more, this lead is often 100 feet or better, and the machine gun slugs "converge" on the ship to destroy it.

At the Air Force gunnery school at Tyndall Field near here, this phase of gunnery is taught in two large wooden buildings divided into small motion picture compartments. In each compartment the gunner is seated behind a dummy machine gun which projects a ray of light. His job is to follow the track of an airplane moving swiftly across the screen from surprise angles, and to quickly figure the correct lead to hit it before its guns are in effective range. An instructor coaches the student through a two-hour practice period.

Under the blazing Florida sun and subjected to high humidity day and night, the training buildings were stifling hot, however, until air conditioning was installed.

Gunnery students in the small rooms perspired and grew angry at temperatures well above 100° F. during the afternoon, many of them being "washed out" through inability to concentrate on the task under such trying conditions.

When the problem grew so bad that both instructors and students begged for some ventilation in the rooms, Tyndall Field engineers studied the matter, and developed highly specialized air conditioning to meet it. Each building now has a 15-ton York cooling system built up "piecemeal" from scrap building materials, two large package units, and cooling towers resembling those of an old-time ice plant.

The units are located in a furnace room at the end of each building, with a fresh air intake shaded by a sloping roof. Air passes through the package units twice before being forced down through plywood ducts individually to each room.

A master thermostat is provided to keep the air to around 84° F. normal operation. Condensing cooling is provided by a tower 12 feet high by 4 square, constructed of latticed strips of cedar over a concrete tank. Total cost of this novel system was merely that of the package unit and pipe for the water—enlisted man carpenters building the rest of each system from scrap materials.

Rorison Leaves Servel; To Open Public Relations Office

EVANSVILLE, Ind. — William A. Rorison, manager of the publications and publicity divisions of Servel, Inc., will leave Servel Nov. 1 to establish his own public relations counsel office in the Field Bldg., 135 S. LaSalle St., Chicago, he has announced.

Mr. Rorison has been with Servel for more than 14 years in public relations, editorial, advertising, and sales promotion work. In addition to handling the firm's local and national publicity programs, he has been editor of "Servel News," "Servel Salesman," and other house organs. Since Servel was converted to war production, Mr. Rorison has assisted in planning and publicizing many of the company's nation-wide service programs such as the Home Volunteer movement and the Nutrition in Industry plan.

Before joining Servel in 1929 Mr. Rorison was a junior executive in the advertising department of Armstrong Cork Co., Lancaster, Pa.

'Mr. Fix It Shop' In Raleigh Expands

RALEIGH, N. C.—Guy L. Bunch, operator of "Mr. Fix It Shop" at 412 W. Morgan St. here, has expanded his service activities to include repairs on all makes of home laundry equipment and small electrical appliances.

Carrier Corp.'s 'Quarantined' Postwar Planners Point Out Some Problems

But Real Progress Is Being Made, They Say

SYRACUSE, N. Y.—How Carrier Corp. is attacking the problem of postwar planning through its unique "quarantine group" is described in an article written by J. M. Bickel, chairman of Carrier's postwar planning group, for the "Executives Service Bulletin" published by Metropolitan Life Insurance Co.

"One of the first things we did was to set up what we call a Quarantine Group—a group of deep-thinking engineers and designers who are isolated as with a contagious disease," explains Mr. Bickel.

"They have instructions not to mix with us common people until they have the answers to some research problems which we consider fundamental to our postwar thinking. Should anything of value to the war effort come out of their labors, it will not be withheld, needless to say, but primarily this group is dedicated to peaceful pursuits."

EXPECT BROADENING MARKET

The fact that air conditioning is a relatively new industry permits Carrier to anticipate a broadening market, and therefore its postwar planning is necessarily one of expansion, points out Mr. Bickel.

Likewise of great importance is the fact that Carrier is producing for war practically the same things it produces for peace—refrigerating machines and air-handling equipment, declares Mr. Bickel. Therefore Carrier faces few of the problems of reconversion to peace-time production that confront other industries, particularly automobile manufacturers now making tanks, airplane parts, etc.

"Rather than struggle with astronomical figures of total national production — like $140,000,000,000 — and attempt to break that down in terms of what it means to us, we have tried to rationalize our postwar thinking in terms that mean something to our officers and to our employes.

WANT MORE EMPLOYMENT

"Suppose, for instance, that in the postwar period we should have a choice between employing 2,000 people, doing a business of $20,000,000 and netting a million, or employing 3,000 people, doing $30,000,000, and still netting the same million. We would choose the latter because we subscribe to the theory of full employment, and by so doing we would assure incomes for 50% more people without adversely affecting our financial position and the interests of our stockholders.

"We believe that the place to start postwar planning is in our own backyard—and with a minimum of fuss. So, reduced to its simplest form, our problem is summed up like that. (1) What should we make? (2) How should we sell the products of our manufacture? and (3) What would be the probable point of view of government? And along these lines, we have progressed."

Carrier's sponsorship of round-table discussions with other manufacturers and industries on the subject of postwar planning is recounted by Mr. Bickel.

Last January representatives of 16 other concerns met with Carrier planners at Syracuse for two days to discuss approaches to postwar problems. In May another two-day conference with 19 firms was sponsored by Carrier.

That considerable progress has been made in thinking about peace-time problems is proved to Mr. Bickel's satisfaction by the fact that last January planners were asking, "How?" while in May they said, "Now."

'COMMUNITY OF INTEREST'

"Many ideas have come out of these informal planels—along with some conclusions," declares Mr. Bickel. "The fundamental idea of community of interest between widely divergent businesses probably takes first place. The surprising thing is that it took such a cataclysm as a world war to start businessmen thinking about something so simple and so basic.

"One of the conclusions reached was that all the planning in the world would be of no value until management was prepared to put some money on the line. Unless the executives who control the purse strings are convinced that getting ready for the days after the armistice whistle is worth an investment of dollars **now**, planning could go on indefinitely, but industry would still be unprepared for peace.

"Another consideration was the financing of postwar business. It takes money to operate a business, and this money has always come from two sources. Management has heretofore depended upon reserves set aside for such purpose out of earnings, or upon money invested by the public with the expectation of financial reward. Financial problems will confront many of us after the war is over—and the time to think about those problems is now," avers Mr. Bickel.

"Another realistic conclusion concurred in by these groups is that food, clothing, and shelter will still be popular after victory. The point is that industry must make them better and sell them for less money. New products, alone, will not assure full employment.

"Radio, television, aviation, plastics, electronics, jeeps—all these are fascinating to contemplate for civilian economy postwar, but the real job is to do a little better tomorrow the things that yesterday we did so well."

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

or so, even though refrigerator manufacturers could produce everything else.

It's labor that is the key to resumption of production of consumers durable goods for civilians.

Those Five Senators

Unfortunate was the rather widespread belief that the five globe-touring Senators came back with an anti-British attitude. Actually, it was one of respect. Rather than criticizing the British, they were criticizing the Americans for not being on their toes like the British.

As this department has averred many times before, the British are the smartest people on the earth when it comes to statesmanship. whether of the diplomatic or the economic variety. They never overlook the fact that the continued life of the Empire depends on its continued mastery of world trade.

We say "unfortunate" because a drowning man will clutch at a straw, and the Germans are drowning. About the only hope they have left is that the Allies will quarrel among themselves as the final showdown approaches. Any such indications will probably postpone the date when they throw in the towel. And the sooner they give up, the more lives will be saved.

However, the point that these Senators brought up should not be overlooked. That is, we are apparently fighting this war much as we fought the last one—as the only altruistic nation in the melee. As in the last one, we will help win it, pay for most of it, and get nothing out of it except headaches.

The British and the Russians, of course, will acquire more territory, more rights, more privileges. There seems to be a growing feeling around here that maybe we ought to get something for our money this time. If we don't begin to look out for our own interests, we'll again be the fat boy with the stick of candy.

U.S. Prosperity Is An Asset to Allies

In this connection, it might be respectfully pointed out that it is to the interest and advantage of our Allies (Britain and Russia have been our Allies in most of our wars, even though no formal longtime agreement has ever existed) to keep the United States prosperous and healthy.

America provides the strategic reserve of manpower, materials, and especially money, which always insures the victory. If we go broke over here, if we're unable to carry our staggering debt after the war, our Allies won't have that reserve which has kept them from inundation twice in this century.

Moscow Parley

There's a lot more at stake in the Russian conference between Hull, Molotoff, and Eden that mere diplomatic relations. If the Russians, the British, and the Americans can agree on what to do with Germany after she gives up, the way may be opened to joint military action.

As matters stand now, the Russians are fighting one war against the Germans, and we're fighting another. It is sometimes overlooked that the Russians are not only denying us Siberian bases for use against Japan, but also deny our bombers the opportunity to wreck havoc against Germany from bases behind the Russian lines.

If British-based bombers could go on to Russia, for example, instead of returning to Britian, several hundred miles could be cut off the trip to important targets. That would mean greater bomb tonnage. If we could base in Russia, the Ploesti oil fields in Rumania could be put out of commission for keeps, and soon.

So, if the three powers can reach an agreement which would have the confidence of the Soviets, joint military planning might follow, and quick destruction of Germany should be the result.

Incidentally, such coalition would no doubt bring the Turks, Bulgarians, and Rumanians running to get on the bandwagon.

B-29 Now In Limited Production

That super-bomber which Gen. Arnold occasionally refers to is now in limited production. It is hoped that within a few months this "token" production can be stepped up to a steady flow.

And then it will be "on to Tokyo."

The super-bomber is designated as the B-29. It is twice the size of our Flying Fortress, with more than twice the range. All details, of course, are still secret.

With the aid of these bombers, and with our Navy arriving at an almost incredible peak of strength, it may be possible to administer knockout blows to Japan next spring at about the same time Hitler is being strung up to a sour-apple tree.

Dick Neumann Back With Us Again

Several issues ago this column told a few exploits of Sgt. Dick Neuman, the machine-gunner who was wounded in the successful attack on Sanananda Point, New Guinea.

We are proud and happy to announce that Dick is back with the NEWS again, having received his honorable discharge from the Army. He is hitting the ball hard for us, and is a welcome addition to our thinned-out staff.

Dick's attitude toward his work reminds us of a little piece, "The New Prize War Worker," which T. K. Quinn, Director-General of the War Production Board, has written. Quote:

"A new kind of war worker has come into American industry within the past few months. He is heartily welcomed wherever he appears and is now being sought by all of the companies familiar with his significant contributions to morale and production.

"This newcomer is eager, cooperative, and devoted to his job with a remarkable intensity of spirit and energy. He knows 'what it's all about' and reveals by what he does a deep understanding and appreciation of the ultimate meaning and effect of every little detail. This war is his war and he talks and lives each hour as though its outcome depended almost entirely upon him.

"We first heard of this new war worker at the Ford bomber plant. Mr. Sorenson was enthusiastic about him and determined to get as many more like him as possible. It appeals that improved conditions automatically attend his presence everywhere. His example has a stimulating and highly constructive effect upon the attitude of those who come within the sphere of his influence.

"Our manpower problems, it has been said, would be largely solved if every war worker realized as this newcomer does how inexorably and intimately his daily effort, attendance, and results are bound up with our success or failure at the battlefronts.

"For this new war worker it is not necessary to conduct rallies or morale campaigns, or continual exhortations. He is on the job regularly and consistently and insists upon giving his utmost. This man as you may have guessed is the soldier returned from the battlefront, honorably discharged because of some injury or condition which does not prevent his employment in a war plant. He doesn't have to be told; he knows and feels the vital importance of every nut and bolt, every hammer blow and revolving wheel in the battle of production. He is the new prize war worker."

Suggestions to Combat Manpower Shortage In Jobbers' & Service Shops

Smart Girl at Telephone Can Save Many Man-hours, Parts Manufacturer Says

CANTON, Ohio—"There are many ways to combat the manpower shortage in the service shop and parts jobber's store," declares Walter A. Frantz, president of the Frantz Mfg. Co., producer of replacement parts for washers, who backs up his claims with several suggestions aimed to shorten time-consuming operations.

While admitting that problems confronting the manager of a service shop today are serious, Mr. Frantz, who is a director and one of the founders of Apex Electrical Mfg. Co., Cleveland, contends that these problems can be solved to a certain extent, at least, and shows how to do it.

"One way to attack the manpower shortage is to place a girl at the telephone of a service shop to answer service calls." Mr. Frantz said. "Of course, she will have to be a high type of girl and will need some training to do the job right," he added, "but I have a plan in mind that will help her do a better job than the average man, besides releasing that man for other duties.

"She should have at the telephone a pad of printed forms designed to help her ask the proper questions and get the right answers from the housewife, say, who calls up the service shop when her washer stops in the middle of Monday's washing," Mr. Frantz stated.

He outlined roughly the form as follows:

1. Obtain the name, address, and telephone number of the person calling. It is very important to get this information, especially the phone number, Mr. Frantz said, for usually it is necessary to call the housewife back, perhaps several times.

2. Inquire as to make and model of appliance. While the housewife may not know the model number of the washer, she can remember when she bought it or describe some of its features, such as, suction cups in the washer proper, spinner drier, etc., which will enable the experienced service men to tell almost exactly what model it is and thus permit him to be fully prepared when he makes the call.

3. Tell the person calling quite clearly that there will be a charge for making the service call. Some people expect to have the servicing of their appliances done free of charge. If a service man makes the trip, looks over the job, and then tells the housewife how much it will probably cost only to have her throw up her hands in disgust and refuse to have the work done, all that time, gasoline, and rubber is lost.

"When the housewife tells the girl at the service shop's telephone that she won't pay for the service, just forget about the whole thing," he advised.

4. Ask the housewife a series of questions about just what happened. Did the motor burn out while operating the washer or the wringer, etc.? Answer to these questions will give the service man a pretty good idea of what to expect when he makes the call, and combined with the information as to make and model, he can intelligently load his truck with those parts and tools he will probably need, thus avoiding trips back to the service shop.

Another scheme, which Mr. Frantz says is being used by a Boston firm, will save much time in handling service calls. This firm sends a postcard out which states that the service man will answer the call at such-and-such a time on a particular day. If no one is home, the card states, a service charge will be made anyway, unless a new appointment is made.

He Tells How

WALTER A. FRANTZ

Housewives invariably phone the firm to set a time when they will be home rather than pay the charge, Mr. Frantz explained, thus eliminating useless trips by the service man.

Tricks of the trade, comparatively simple to those "in the know," can save much time. Mr. Frantz has another idea which he believes will save much time in handling of stock, even though it will require considerable time to prepare.

He would like to have available to service shops and jobbers stock bin labels that would show the conventional name, part number, and code number, and in addition a cut of the part itself. The presence of the cut on the label, according to Mr. Frantz, would be a great help to new stock room employes, such as girls, who haven't acquired familiarity with the names and part numbers of the parts in stock.

These labels should be printed up in book form, perforated so they can be torn out easily as needed.

"Above all, they should be backed with a good adhesive, something like Scotch tape," he said. "The book would probably be as large as the telephone book in a big city, but I think so much of the idea that our company is considering making them up for the washer trade and selling them at cost. Putting on a good 'stickum' is very important, for nothing is so maddening as a gummed label that won't stick."

"Speaking of part numbers and stock room employes, I think prospective stock clerks should be run through a simple little test to see if they can easily remember part numbers," continued Mr. Frantz.

"The ideal stock clerk can remember almost every part number and can rattle it off without hesitation, which is a tremendous help in his work. Of course, those individuals are comparatively rare, but my proposed test would indicate if the applicant has possibilities along that line."

TESTING APPLICANTS

In the course of interviewing the applicant, the service manager should display some 25 parts to which tags showing name and part number are attached. After explaining the test briefly, he permits the applicant to examine the parts for several minutes. Then the matter is dropped while the applicant is, for example, taken through the shop. Later the applicant is confronted with the parts again, but this time there are no identifying labels attached.

"Some people should be able to remember as many as 10 part numbers out of 25 in such a test," Mr. Frantz declared, "and they would certainly be good timber for stock room work. Even the person who remembers only five part numbers has considerable possibilities."

Actual storing of parts for easy handling is a problem that faces any service firm or pobber. The larger firm uses the conventional bins, but the small shop may not be able to afford these and so the service man can conceivably waste time looking for small parts.

INEXPENSIVE BINS

To avoid this problem without spending money for bins, some small shops store their parts on shelves in bread tins, which are roughly 4 by 9 by 3 inches in size, Mr. Frantz said.

Storing or displaying gaskets by hanging them on a hook or nail irks Mr. Frantz and many service men, too, he complained. Gaskets thus displayed will lose their shape, making more work for the service man when he attempts to install them, Mr. Frantz averred. Instead they should be placed flat on a board, for in this manner they will not be deformed.

"Sometimes gaskets must be made in the field by service men, and this can be done quite easily if you know how," he intimated. "The average gasket made by the 'cut and try'

(Concluded on Page 9, Column 1)

Refrigerators & Washers Make an Ideal Year-Around Combination for Both the Service Shop & Jobber, Frantz Thinks

(Concluded from Page 8, Column 5)

method looks pretty bad. Besides, it wastes a lot of time."

Method recommended by Mr. Frantz calls for only two tools, a hammer and a ball bearing with a diameter of about twice that of the bolt or dowel pin holes in the gasket.

The service man should first place the gasket material over the surface to be gasketed. Next place the ball bearing over the bolt hole and hit it with the hammer. The ball bearing will neatly cut out a hole of the exact size desired, Mr. Frant said. After screwing in a stud or inserting a dowel pin in the first hole, knock out the other holes required. The outside and inside shape of the gasket can be easily obtained by striking along the edges with the hammer.

"This method takes very little time and produces a good-looking gasket," Mr. Frantz claims. "It is very important that the ball bearings used should be twice the diameter of the hole," he added, "for a smaller diameter bearing will stretch the gasket material too much to do a good job."

LONG-RANGE PLANS

Most of the suggestions of ways to relieve the manpower shortage which Mr. Frantz outlined in the preceding paragraphs have to do with immediate problems, but he has, however, additional ideas and schemes of a long-range nature.

A time-saving plan which Mr. Frantz believes would attract a higher type of man to the service field and make for better repair work involves the installation of degreasing apparatus in a service shop.

"No one likes to get his hands dirty, even a skilled mechanic," avers Mr. Frantz. "Besides, much time is consumed in cleaning off the grease and dirt which a part frequently accumulates before actual repair work starts. Washing with solvents and wiping with rags takes time and doesn't do nearly so satisfactory a job as a degreaser could," he explained.

A degreasing machine, in which parts are placed for a short time to permit the gases to remove the grease, is the answer.

"The one drawback to using a degreaser is that the machines are too big and too costly for the average shop to acquire," he stated. "With this in mind I have been working with the manufacturer of degreasing equipment to bring out a cheaper model that a service shop could use.

INEXPENSIVE DEGREASER

"We have practically completed design of a machine large enough to handle the parts used in the washer and refrigeration fields but costing between $600 and $700, he added. "Such a machine should readily pay for itself in saving of time. Almost anyone could operate such a machine, leaving the skilled service man free to do the actual repair work.

"Much more service work could be handled in a year, I believe, and the finished repair job would have a much better appearance. Also the service shop could easily afford the better type of mechanic who would be attracted to the field."

Servicing of refrigerators and washers ought to go hand in hand, Mr. Frantz contends. Such a combined service operation would give the service firm a year-around almost steady flow of business, with refrigerator servicing being most active in summer and washer servicing occurring most frequently in winter months.

Activity on washer servicing begins to pick up around Labor Day when the housewife prepares to send the children back to school. During the summer refrigerators are overworked, but the washer is not used so much, for kids don't have to be "spic and span" every day as they do when they are going to school, pointed out Mr. Frantz. Washer service hits its peak in February, he added.

EASY FOR REFRIGERATOR MAN

"It would probably be easier for a refrigeration mechanic to learn washer servicing than for a washer man to learn refrigeration," speculated Mr. Frantz. "The washer man would naturally have to become informed about refrigerant gases and controls, whereas the refrigerator service man would be facing a straight mechanical unit if he tackled a washer," he explained.

Mr. Frantz's thinking along the lines of "combined operations" is akin to the activities of the Appliance Parts Jobbers Association, Inc. of Detroit. As explained in an editorial on page 12 of the Aug. 16 issue of AIR CONDITIONING & REFRIGERATION NEWS, this national association of washer parts jobbers, and that includes several who also handle refrigeration parts, is trying to persuade both the service man and the manufacturer to deal with one large centralized jobber in each territory so that all parts of all makes will be available at one convenient source.

The large jobber handling all parts is the ideal method of handling the distribution end of servicing, contends Mr. Frantz. Such a jobber can afford to employ high-class people who know the business and can operate efficiently. Experienced men can provide better service to the service-man customer and deal more intelligently with the manufacturer, he believes.

These improvements, plus the fact that a large operator could afford to (and should, Mr. Frantz added) set himself up in a large, attractive building centrally located, would add much to the prestige of the trade, he believes.

ORDER SYSTEMATICALLY

Ordering of parts from the manufacturer can be a cause of trouble if not done systematically, stated Mr. Frantz, speaking as a manufacturer. "Some people have a tendency to wait until the last minute before ordering parts needed to replace their stock, and are quite disappointed when their orders can't be filled immediately.

"For example, we may run a thousand washer center post castings through our foundry one week, and dispose of them almost immediately. If an order comes in before we have sent through another batch of these posts, that order cannot be filled immediately. Perhaps the buyer will try elsewhere before sending us another order in two or three weeks. In the meantime another lot of these castings may have been run off and disposed of before the buyer's second order comes in.

"Firms should order their parts regularly—once a week preferably," said Mr. Frantz. "The ideal way, at least from the manufacturer's point of view, is to place a standing order with the manufacturer for so many parts each month. This would permit better scheduling of production and should insure the buyer's getting his parts."

Such a method of ordering would go a long way towards alleviating shortages of parts.

R. Gill, Wolverine Tube Purchasing Agent, Dies

DETROIT — Robert H. Gill, purchasing agent of Wolverine Tube Division of Calumet and Hecla Consolidated Copper Co., died at his home Oct. 10.

An employe of Wolverine Tube for 14 years, Mr. Gill had suffered from an illness which has kept him away from his desk off and on for the last two years. He was 53 years old.

A. L. Woods, assistant purchasing agent, will take over as purchasing agent.

G-E Orders Decrease 10%

SCHENECTADY, N. Y. — Orders received by General Electric Co. during the first nine months of this year amounted to $1,199,904,000 compared with $1,339,449,000 in the same period last year, a decrease of 10%, President Gerald Swope announced today.

Williams Gets Oakland Westinghouse Post

SAN FRANCISCO—J. Clyde Williams, formerly apparatus and supply manager for the Westinghouse Electric Supply Co. at San Francisco, has been appointed manager of the company's branch at Tenth and Alice Sts., Oakland, Calif.

Howard G. Brown, formerly assistant to Mr. Williams, has been named to succeed him as apparatus and supply manager at the company's San Francisco headquarters.

Announcement of the two appointments, effective today, was made by E. J. Duggan, district manager for the supply company.

Addicks Manages N. Y. Office of Cutler-Hammer

NEW YORK CITY — W. E. Addicks, formerly in charge of the Boston sales office of Cutler-Hammer, Inc., has been named manager of the firm's office here with supervision over the entire New York sales territory.

Immediately after his graduation from Cornell University in 1914, Mr. Addicks joined Cutler-Hammer and for 10 years was chief engineer at the New York works.

He holds a number of patents on battery charging schemes, heating, and motor control devices, and has been active in motor control educational work among industrial groups and engineering circles.

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F. M. COCKRELL, *Founder*

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They'll Do It Every Time

By Jimmy Hatlo

The Empire's Plans For Postwar

POSTWAR plans of Great Britain and the British Commonwealth of Nations, our closest wartime allies, show common aims of greater income and material comforts for the average citizen, enlarged programs of social security, and varying steps toward more government responsibility for and control over the business and economic life of each nation than before the war. All British countries show increased awareness of the importance of the United States in their own and the world's future.

These developments are described in a report on postwar plans of the United Nations, including the United States, now being completed for The Twentieth Century Fund. The report, which is being prepared by Lewis L. Lorwin, deals with the programs each nation is making for its own domestic development.

Planning for a better Britain after the war is demanding measures which would reduce business fluctuations, provide full employment and increase national output, according to the report.

'BRITISH MUST EXPAND GREATLY POSTWAR EXPORTS'

It is widely recognized today in Great Britain that "to attain these ends the British must expand greatly their postwar exports of manufactured goods. . . . The British public also realizes that the formerly important British export industries, such as cotton cloth, coal, and machinery, can no longer rely on the initial advantages which gave them a dominant place in world markets in the past . . . a larger portion of British exports will have to be in specialized goods and in the products of the newer chemical and electrical industries."

The social security proposals advanced by Sir William Beveridge are summarized in the report, which notes almost universal sentiment in England for a larger and more unified system of social security than at present. Great Britain also is planning an extensive housing program, not only for the bombed-out areas, but looking toward the replanning and rebuilding of many cities and achieving a better balance between industry and agriculture.

Employer groups, such as the Federation of British Industries and the Association of British Chambers of Commerce, have developed plans to provide the 46 million people in the British Isles with "a maximum means of employment and with subsistence at as high a degree as the community can achieve."

LABOR PARTY & UNIONS SEEK MORE GOVERNMENTAL CONTROLS

Some sections of the British public, notably the Trades Union Congress and the Labor Party, go far in advocating government controls. "Influential leaders of the Labor Party stress the necessity of gradual procedure in reorganizing the economic life of the country. They also point out that social control over industry may take many different forms, that private enterprise in many industries has 'a lot of value' and that even the monopolistic industries may be controlled through various agencies, 'from a public corporation to some form of management under a board of directors with a nationally nominated chairman.' "

ENGLAND WILL BE DEPENDENT ON U. S. POSTWAR POLICIES

The Fund's report says that "it is generally acknowledged in Great Britain that the United Kingdom after the war will be dependent to a large degree upon the commercial and financial policy of the United States. Some, especially the Federation of British Industries, are somewhat apprehensive of what this may mean in practice. But two policies to stabilize postwar world trade are suggested. One is to form larger economic units of agreement, specifically to link the trade of Great Britain with that of Soviet Russia, China, and the United States. Another is to apply in some form the principle of lend-lease so as to supply, free of charge, goods and services which would help to reconstruct the devastated areas and to develop the newer countries."

Canada has gone farther than any other English speaking nation in putting into law its plans for the rehabilitation of men discharged from the armed services. A Canadian leaving the service will receive a civilian clothing allowance, transportation home, and one month's service pay. In addition, there are provisions for vocational training, for helping those who wish to complete their education, and for assisting veterans to purchase land and equipment to establish themselves in farming.

Canada traditionally is a large producer and exporter of bulky, relatively low value articles (wheat, forest products, minerals) and one of the world's largest importers of coal, oil, and steel products. The report describes how greatly Canada has expanded its industrial plant and agricultural output during the war and says, "At the end of the war Canada will not only be faced with the problem of world markets for its foodstuffs and raw materials but will also need an outlet for its increased industrial-capacity."

CANADA IS COGITATING SOCIAL SECURITY PROGRAM

The Canadian Parliament is considering proposals for a comprehensive system of social security for all citizens and the providing of health insurance and medical care for all Canadians. An Advisory Committee on Reconstruction under the chairmanship of Dr. F. Cyril James has recommended "the attainment of full employment within the Dominion of Canada coupled with an increase in the standard of living." The committee hopes to preserve "the basic Canadian tradition of free enterprise and personal initiative in both political and economic life."

Australia, under a Labor government which has gained an increased majority in recent elections, has plans for enlarging her social security system so that it will "go further than the Beveridge report." This "cradle to grave security" is to be supplemented by greatly increasing the public health program, and some proposals call for government control of medical practice and free hospital and medical care for all, regardless of income.

AUSTRALIA MAPS BROAD PROGRAM FOR FUTURE

Australia has extensive plans for re-establishing war veterans in civil life, including job training, education, unemployment insurance, and in setting up veterans in business or on farms. The Fund report says the Australian government may spend large sums on public works and take other measures to prevent postwar unemployment "especially since the people have become used, during the war, to large public expenditures and to the idea that such expenditures can reduce unemployment to a minimum."

AUSTRALIANS LOOK TO AMERICA FOR VENTURE CAPITAL

Middle class and business groups in Australia, says the Fund report, want to continue the expansion of industry forced on Australia by the war. They see the possibility of "developing not only its iron and steel industry, but such industries as high-speed tools, constructional materials, motor cars for domestic use, glass, optical instruments, and aircraft. . . . In the past, Australia depended for its capital needs, in addition to local savings, almost entirely on the British capital market.

"In view of the declining position of Great Britain as a creditor country, it is hoped that American businessmen might be induced to expand their investments and operations in Australia after the war."

These studies should be of especial interest to American businessmen in view of the popularity of proposals that America and the British Empire join hands to keep the world out of mischief in the future.

You can bank on it that the British Empire, as usual, will emerge from the war greater and stronger than ever before.

LETTERS

'WE APPRECIATE TIMELY COVERAGE VERY MUCH'

Engineering Specialty Co.
204 W. Ridge Road (U.S. 6)
Gary, Ind.

Editor:

We have subscribed to the NEWS for several years and this is the first time we have taken a few minutes to tell you how much we appreciate your timely coverage of the refrigeration field. Your up-to-the-minute information on priorities, selective service, current events, etc. makes your paper a very valuable tool to every one in the industry.

Your thorough coverage of the "Freon" shortage and refrigerant substitution has been worth an inestimable amount to all your subscribers we are sure.

E. M. KIRTLAND, President.

Radios Get the 'Cold Shoulder'

Inside the new stratosphere chamber developed by Philco engineers, is pretty Rita Wilds of Philadelphia, dressed in heavy parkee and gloves as she checks important Army and Navy aircraft radio equipment while it is subjected to actual flying conditions.

* * *

—70° Stratosphere Chamber Built By Philco For Testing Aircraft Radios

PHILADELPHIA—A stratosphere chamber in which the temperature is reduced as low as 70° below zero, Fahrenheit, to simulate the actual conditions encountered by aircraft radio equipment in combat use, has been constructed by Philco's refrigerator and radio engineering staffs.

The atmospheric pressure is reduced to 1.3 inches of mercury, or approximately 1/20 of normal atmospheric pressure, equivalent to what would be encountered by a plane flying at 70,000 feet.

In this huge stratosphere chamber, the walls of which are nine inches thick, Philco's latest types of aircraft radio chamber, developed for the Army and Navy, undergo the most exacting tests.

Not only is the condition of the radio equipment examined after it has been subjected to these extremes of temperature and low pressure, but the effect of quick changes that would be caused by rising to 20,000 or 30,000 feet in a short time receives the most careful attention.

Component parts of the equipment must all perform satisfactorily under the extreme changes before the final product is submitted to Uncle Sam for use on battlefronts all over the world.

The stratosphere chamber was designed by W. C. Hume, laboratory engineer of Philco's refrigerator engineering department, under the direction of M. G. Shoemaker, assistant chief engineer. Because of their long association with the household refrigerator industry, these technicians were especially qualified to meet the needs of the radio division for a chamber that was adequate for present wartime flying requirements.

The chamber itself is built in the form of a cylinder with spherical heads. The interior is six feet high and six feet in diameter. The outer casing is a steel shell of 7/16 inch steel plate. Inside this is contained the insulating material—glass wool of nine inch thickness.

The inside wall of the chamber is of aircraft-type plywood, and the cooling coils for the refrigerating mechanism, which produces the subnormal cold, are installed in the top.

The refrigerating mechanism consists of two motor-compressor units each with a capacity of 7,400 B.t.u.'s per hour at minus 70° F. evaporator temperature.

To reduce atmospheric pressure in the chamber, a 20-hp. water-sealed rotary vacuum pump is used in conjunction with automatic controls.

Conditioning Permits Mass Production of Precision Opticals

HUNTINGTON, W. Va.—Described by the "Reader's Digest" magazine as having "done the kind of job with precision optics that Henry Kaiser has done with shipbuilding," Zenith Optical Co. here is an industry born of war emergency needs, and aiding in the mass production of precision opticals is air conditioning equipment.

Explaining the use of air conditioning equipment under ideal conditions, Dr. L. M. Polan, technical director, states:

"Optical elements are frequently mounted by means of pitch and wax, and must be held firmly in position in order to obtain true surfaces. If the temperature changes even a small amount, this material will warp, allowing the optical elements to become displaced, or put in a condition of strain. If the temperature drops sufficiently, the mounting material becomes hard and brittle, and the optical elements may be completely dislodged.

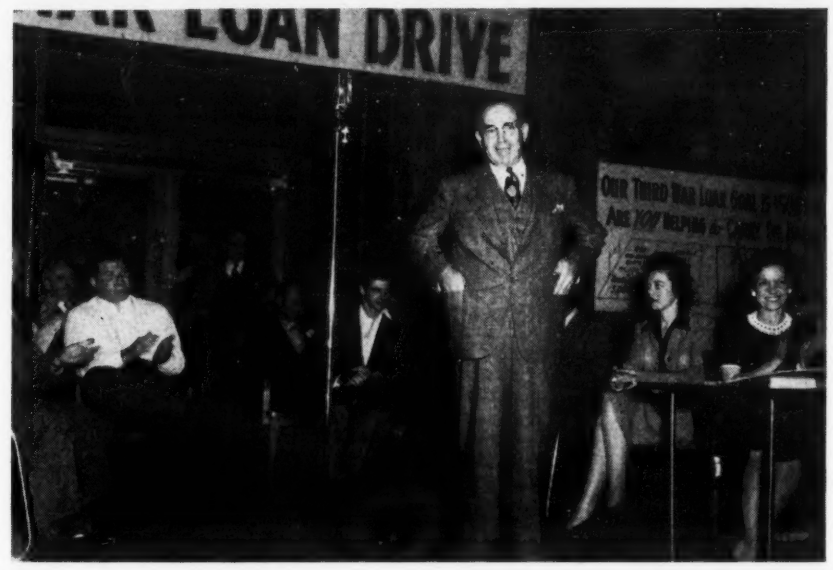
"When polishing glass surfaces against a pitch surface, it is important to maintain a specified constant temperature in order that the surfaces may become neither softer nor harder.

"Polishing is accomplished by a mixture of compound and water. At one stage of the operation, this compound is allowed to dry out with a comparatively small amount of moisture left on the surface. In order that this does not get out of control, it is important that the relative humidity and temperature of the air remain constant."

To fulfill these rigid requirements of temperature and humidity control Carrier Corp. has built and installed for Zenith an air conditioning system consisting of air conditioning units, refrigeration compressors and unit heaters, tailored to fit the peculiar needs of this plant. Although the major portion of the building is served by one system each department has its own individual control for maintaining the desired temperature and humidity.

In addition to manufacturing range finders and telescopic lenses, Zenith is reported to manufacture a large part of the optical products used in American tanks.

Hollywood Applauds Universal Cooler



Flanked by Hollywood celebrities, President F. S. McNeal of Universal Cooler Corp., Marion, Ohio, recently directed auctioneering of war bonds before his employes, who subscribed for $177,000 worth to beat by a "slight" margin their quota of $50,000. Left to right are Charles Dingle and Hal Roach, Jr. of 20th Century Fox film studios; Edward A. Langwish, Universal Cooler treasurer; Casey Shawhn and Bob Condon of 20th Century Fox; President McNeal; Kathryn Bishop and Katherine Burke of Universal Cooler.

Imperial Introduces Multi-Size Flaring Tool For Steel Tubing

CHICAGO—A new, simple flaring tool, which will make correct double flares on all popular sizes of thin wall steel tubing from 3/16 inch to ½ inch for S.A.E. flare and inverted flare joints, has been introduced by the Imperial Brass Mfg. Co.

The tool also can be used for making single or double flares on copper or aluminum tubing.

Tool is said to insure against cracking or splitting of tubing in flaring because it folds back the end to make a flare with double-thick, double-strength walls.

Two of the important advantages listed for this new tool are: first, it can be used right on the job; and second, one tool will handle all the most widely used sizes of tubing: 3/16 inch, ¼ inch, 5/16 inch, ⅜ inch and ½ inch O.D.

Tool is small and convenient to work with. No vise and no hammering are necessary and flaring can be done in very close quarters. Tool first bells the tubing, using an adapter as shown in Fig. 1, then completes the double flare as shown in Fig. 2, very much the same as a conventional flaring tool.

It can be used with soft steel tubing of seamless, butt-welded or lap-seam-welded construction having not over .035 inch wall.

Complete tool consists of a flaring bar, yoke and five adapters all furnished in a metal kit. It is catalogued as No. 93-FB Multi-Size Double Flaring Tool and is completely described in Imperial Brass Mfg. Co.'s Bulletin No. 337.

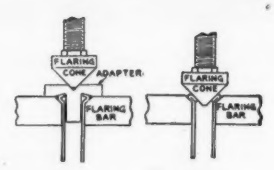


Fig. 1 Fig. 2

York Pre-Cooling Co. Set Up In California

LOS ANGELES—York Pre-Cooling Co. has been incorporated in California, with a capital of $100,000. Directors are: A. Y. Preble, Isaac Schlatter, both of El Centro, Calif., and Adolph H. Koenig, Jr., of Los Angeles.

Servicing Sealed Units Of Kelvinator Design

Written in collaboration with the service department, Kelvinator division, Nash-Kelvinator Corp.

Service Diagnosis on Kelvinators

The following chart is broken down in specific service on standard models and Moist Master models:

Service Diagnosis — Standard Models

Complaint	*Cause*
Runs Too Much	1. Leaky Door Seal 2. Excessive Service Load 3. Temperature Control Left in Coldest Position 4. Dirty Condenser.
Unit Will Not Run	1. Temperature Control Contacts Dirty 2. Temperature Control Power Element Has Lost Its Charge 3. Service Cord Plug Pulled Out of Wall Receptacle 4. Burnt House Fuse or Bad Electrical Connection 5. Low Supply Voltage Causing Overload to Cycle.
Not Cold Enough	1. Should Be Defrosted More Frequently 2. Retarded Air Circulation in Food Compartment 3. Temperature Control Dial Set Too Warm.

Service Diagnosis — Moist-Master Models

Freezing Temperature in Cold Mist Freshener	1. Control Left in Cold Position Too Long 2. Refrigerator Located in a Cold Room 3. Temperature Control Bulb Improperly Located 4. Control Not Corrected for Existing Altitude 5. Primary System Refrigerant Charge Partially Leaked Out.
Excessive Moisture in Freshener Compartment	**1. Failure to Defrost Freezer Regularly.** Under normal conditions, the humidity in the freshener is controlled by gradual drift of moisture from the freshener to the upper part of the cabinet where it is eventually deposited as frost on the evaporator. If the evaporator is kept properly defrosted, the upper part of the cabinet is nearly as dry as a standard refrigerator. If an excessive amount of frost is allowed to accumulate on the evaporator, its controlling action on the humidity in the freshener is partially lost and an extremely high humidity may result. The obvious remedy is to defrost regularly. **2. Excessive Air Leakage Into Cabinet.** This can be due to a leaking door gasket, poorly adjusted door strike, improper door alignment or loose seal at the rear cover plate. Any of the above causes will allow warm air to filter in and some moisture will be condensed on the walls of the freshener. The remedies are obvious. See corrections described under Cabinet Service. **3. Space Back of Glass Shelf Blocked.** If the space between the back of the glass shelf and the back of the cabinet is blocked by food containers, the drift of moisture laden air to the evaporator cannot take place and may result in some increase in condensation in the freshener. **4. Excessive Service Load in High Humid Weather.** A great many door openings in humid weather will allow moisture-laden air to circulate and some increase in condensation will result.
Slow Ice Freezing	1. Cold Refrigerator Location 2. Incorrect Temperature Control Setting 3. Poor Contact Between Tray and Freezer (a) Excessive ice on freezer shelf (b) Uneven ice formation under tray (c) Lack of moisture for good contact (d) Warped or bent ice tray (e) Primary system refrigerant charge partially leaked out.
Will Not Freeze or Hold Ice Cream	1. Incorrect Temperature Control Setting 2. Excessive Frost Between Tray and Freezer 3. Bent or Warped Tray 4. Butter Fat or Acid Content of Ice Cream Mixture Too Great.

Oil Burner Servicing School Is Opened

PHILADELPHIA — Approximately 100 students have begun the oil burner service training night school course organized here by the Oil Heat and Oil Heat Dealer divisions of the Electrical Association of Philadelphia in cooperation with the Vocational Trade Extension Program of the Philadelphia school district.

Most of the enrollees are from the oil burner industry, some of them being service men who wish to broaden their knowledge, while others are engaged as clerks or in the distribution end of the business.

The enrollment is broken down into four classes of about 25 men each, two classes on fundamentals and two on advanced studies. Two three-hour sessions are conducted each week for all classes, meeting on Mondays and Wednesdays, and Tuesdays and Thursdays. The courses, which started Oct. 4, are scheduled to run until the middle of next January.

First hour of each class session is devoted to a lecture on theory, with the balance of the time devoted to actual shop work on equipment supplied by members of the association. Five complete oil burner units are to be under actual operation, and there will be a supply of gun, pot, and rotary type oil burner parts, as well as all types of controls, combustion chambers, circulating pumps, flow valves, etc.

The four instructors provided by the technical committee representing the Oil Heat and the Oil Heat Dealer groups of the Philadelphia association are to be paid by the school district. The school district also has made available two fully equipped classrooms and an adequate amount of shop space in the Murrell Dobbins school.

Registration fee of $2 is the only cost to students, and those students who at the completion of the course have attended 70% of the sessions will be given a $1 rebate.

Course of instruction as prepared by the technical committee begins with a study of the fundamentals of heating and heating systems before an attempt is made to analyze the different types of oil burners. Following work with the burners, students are put through several sessions on controls covering elementary electrical circuits, thermostats, aquastats, pressure and limit controls.

Fuel pumps are next in the course, followed by work on accessories and domestic hot water systems and controls. After having received a grounding on the operation of the component parts of the oil burners, students study servicing and trouble shooting at some length, learn how to adjust properly the burner controls, and are instructed on customer relations.

'Womanpower' Works For Carolina Service Shop

RALEIGH, N. C.—Bernhard's Electric Co. here has solved the manpower problem in its service department through womanpower. Mrs. Merle D. Matthews, who heads the repairs end of the business, is considered one of the best service managers hereabouts.

Reasons Given for Blast Freezing At--30°F. for Locker Plant Work

Cost Is About the Same, Shrinkage & Freezer Burn Less, Easy To Adapt To Plant, Says Watkins

DES MOINES, Iowa—Pointing out that the quick-freezing process is the "heart" of a refrigerated locker plant operation, J. E. Watkins of the Midwest Engineering & Equipment Co. of Chicago put forth a strong advocacy of the blast freezing method at lower temperatures in his talk before the annual convention of the National Frozen Food Locker Assn. here.

Temperatures of —30° F. and lower were advocated by Mr. Watkins, and he said that properly designed blast freezers using such temperatures would eliminate freezer burn. Said the speaker:

"In a great many cases, locker plants throughout the United States have outgrown their present freezing facilities. The interested governmental agencies have seen fit to permit the construction of many new plants.

What Are the Choices?

"Both the old and the new owners have a choice to make in their installation of freezing equipment: shall it be a type which requires the maximum in food handling, in space requirements, and in time and expense for defrosting, at no great saving in first cost or operating costs, but with very noticeable dehydration and therefore deterioration of the food; or shall it be a type, already being adopted by the larger processors, which reduces handling costs, reduces deterioration to a minimum, demands a minimum in space per pound of product frozen, and lends itself to increases in freezer capacity at a minimum of expenditure?

"Shall it be a type—I speak now of the shelf type freezer and conventional compressor arrangements generally in use—which is restricted in economical operation to freezing temperatures of —20° F. and higher; or shall it be a type which can maintain efficiently, temperatures of —30° F. and lower?

"To carry this inquiry one step further, shall it be a type which is not designed for temperatures lower than the 20° mentioned, and must therefore be largely discarded or used at minimum efficiency upon lowering the freezing temperature in the face of more exacting demands on the industry? Certainly the questions answer themselves.

"I have drawn up a comparison of two types of equipment: the conventional, —10 to —20° equipment, and the —30 to —35° blast freezing equipment.

"Based on delivering the same freezing capacity, the two types cost substantially the same, with perhaps a shade in favor of the blast freezing equipment. The blast freezing equipment requires slightly more power input.

"However, at the same freezing temperatures as delivered by the conventional unit, the blast freezing equipment will deliver around 70% more capacity with a power saving of up to 20%. Savings in handling, attention and space will make up for the slightly greater power requirements at the lower temperatures.

Why Lower Temperatures

"But why the lower temperatures, you ask. Tests made in the freezing of meats have shown conclusively that at temperatures under —30° F. the shrinkage, or moisture removal, from the product amounts to ⅓ of 1% and lower.

"At —15° F., the shrink approximates 8/10 of 1%, and at —5° F., the shrink is about 1.2%, or about 4½ times as much as at —30° F. This is because air holds a decreasing amount of moisture as its temperature falls.

"Shrink means deterioration of the product. When present in particularly large percentages, it results in the phenomenon called freezer burn, which we all recognize as a visible sign of deterioration. Blast freezers, properly designed, eliminate freezer burn while reducing shrink to a minimum.

"Rate of freezing has a great deal to do with quality, as you all know. As early as 1940, DuBois, Tressler and Fenton presented a study which showed that the overall quality of meat frozen at —25° F. in a plate froster, with brine immersion, in a brine spray and in an air blast, all compared very favorably.

"Our experience since that time has carried us to temperatures of —30° F. and lower. We obtain freezing rates of slightly over 10 hours on 15½ lb. hams, 12 hours on bellies, stacked seven inches thick eight to nine hours on turkeys, five hours on fowl, all wrapped and boxed. The average locker plant cut requires about three hours. Strawberries in pans, as an example, are frozen in 10 minutes.

Fits Locker Plant Setup

"Now, just how does the blast freezer fit into the locker plant picture? First, let us describe the blast freezer. It consists of an overhead cooling surface, with a fan and air distributors which direct the cold air over the product at high velocities. There is sufficient air circulated to give a very low air temperature range. This fact results not only in more rapid freezing but in control of the air's temperature off the product, thus calling for a minimum of power consumption at temperature required to obtain the maximum in quality. That is all there is to it.

"But what does the blast freezer do for your plant? It permits you to use a light truck which can be filled in a short time in the processing room and pushed into the freezer, later to be taken into the locker room for distribution of the packages. On the trucks you can use the same baskets now employed.

"The fact that the trucks act also as shelves in the freezer, and that the freezing time is short, results in great saving of freezer space, so that 5,000 pounds of product, for example, can be frozen per day in a freezer measuring 5 by 10 feet.

"Trucks can be loaded and pushed at once into a corner of the locker room which acts also as an anteroom for the freezer and an entrance into the locker room. Freezer doors are eliminated, along with their icing troubles. Temperatures are maintained in the freezer during the whole of the freezing operation.

"Defrosting is accomplished in a matter of minutes, and less often than is required in higher-temperature freezers because moisture removal is less.

"Increase to larger freezing capacities, or lower freezing temperatures, can be accomplished easily by the simple addition of a bit more cooling surface and a blower speed-up, at a lost lower than that required to increase the capacity of the conventional freezer.

"A very important consideration right now, when your industry is concerned about making full use of its bank of critical materials is the fact that a blast freezer requires in the neighborhood of one-fourth the steel in cooling surface."

Central N. Y. ASRE Group Installs New Officers

SYRACUSE, N. Y.—Installation of new officers and talks by Charles Logan, national president of American Society of Refrigerating Engineers, and John H. Field of the Carrier Corp. Chicago office marked the Oct. 8 meeting of the Central New York section of A.S.R.E. held at Hotel Syracuse here.

Directing the activities of the group for the 1943-44 season will be Chairman Dewitt Pike of Rochester Gas and Electric Corp., Vice Chairman William Lynch of Rome-Turney Mfg. Co., Rome, N. Y., and Secretary-Treasurer Ted Glou (re-elected) of Central Service Supply Co.

The 50 members and their friends who attended witnessed the presentation by Mr. Logan of A.S.R.E. keys to the retiring officers: S. R. Hirsch, chairman; Lars Hanson, vice chairman; and Mr. Glou.

Mr. Field, using colored movies, described various locker storage plant installations supervised by Carrier's Chicago office, following which there was an open forum discussion on locker plants.

Processing Plant Is Planned By Idaho Firm

LEWISTON, Idaho—Smith Frozen Foods Co., Lewiston, Idaho, of which Milan D. Smith is general manager, will build a plant in that city to freeze and can all kinds of fruits and vegetables grown in that region.

Army Refrigeration Problems

By P. B. Reed

Electric Refrigeration and Air Conditioning Division, Servel, Inc.

Thermostatic Expansion Valve and Superheat

The name "Thermostatic Expansion Valve" may give the wrong impression as to the function of the valve. It is not a temperature control and it is not intended that it can be adjusted to vary the evaporator temperature.

Actually, the function of the thermostatic expansion valve is **to keep the evaporator fully active** while the condensing unit is running—at the start, at the middle, and at the end of the run. It does this by maintaining a constant superheat of the refrigerant in the evaporator and it would be more properly called a "Constant Superheat Valve."

"Superheat" is not some superior kind of heat, like Superman is pictured as a superior kind of man. More properly, superheat could be known as overheat, for it is simply the additional heat **over that necessary** to cause the liquid to boil at the same temperature.

For example, let's study the temperatures and amounts of heat in the accompanying diagram. The liquid "Freon-12" from the receiver enters the T.E. valve (Thermostatic Expansion Valve) at 90° at a pressure of 117 lbs./sq. in. (gauge). At the T.E. valve the pressure is reduced to 21 lbs./sq. in and the "Freon," therefore, "boils" at 20° F.

One pound of liquid "Freon-12" in boiling at 20° (changing from a liquid to a vapor), takes on 67.94 B.t.u. per pound (Latent Heat of Vaporization), but in doing so it must first cool itself down from 90° to 20°. This takes 16.15 B.t.u. per pound which, when subtracted from 67.94 B.t.u. leaves only 51.79 B.t.u. per pound net refrigerating effect. That is, about one-fourth of the total refrigerating ability of the refrigerant is used in cooling itself to 20° before it can start cooling the evaporator.

A standard ton is 288,000 B.t.u.; so it would be necessary to vaporize 5,561 pounds (288,000 ÷ 51.79) of "Freon-12" to produce one ton of refrigerating effect under these conditions. This means that a one-ton condensing unit must be capable of compressing, condensing and circulating 5,561 pounds of "Freon-12" per 24 hours or about 23.17 pounds per hour of operation at 90° liquid, 20° evaporator.

The heat that boils (vaporizes) the "Freon-12" from a liquid into a vapor is absorbed by the evaporator from the air in the refrigerator. Boiling will occur in as much of the evaporator tube as has liquid "Freon-12" in it, and we say that the vapor boiled off is "saturated."

As the liquid "Freon-12" is fed through the tube it changes from liquid form to a saturated vapor, until finally the liquid is all boiled away, that is, all changed to a saturated vapor at 20°, but heat is still being absorbed by the evaporator so that finally there is no more liquid to take up the absorbed heat and as a result the vapor itself is heated above its saturation temperature of 20°.

The heat that raises the temperature of the vapor above the 20° saturation temperature is called "superheat." By the time the vapor leaves the evaporator the vapor will be warmed probably 6° to 10° above the 20° saturation temperature, but **the pressure is still the same** — 21 lbs./sq. in. — the saturation pressure. Thus, there is a small portion of the evaporator that is not very effective, for the superheat of one pound of "Freon-12" from 20° saturation to 28° superheated gas is only about 1 B.t.u. This part acts as a "drier coil" or a "superheat coil."

If the evaporator were to be held at 20° at all times we could control the feeding of "Freon-12" into it by simply having a solenoid in the liquid line ahead of the coil, and this solenoid operated by a thermostat set for 28°, whose bulb was located at the outlet end of the coil. The thermostat would open and close the solenoid to keep the coil outlet at 28° — that is to keep an 8° superheat, from 20° to 28°, and the evaporator would be kept fully active (at 20° F.) except for the small portion in which the vapor warms up (superheats) from 20° to 28°. So by holding the superheat to 8° we would hold the coil fully active (except for the small superheated section).

This is exactly what a thermostatic expansion valve does. It is a valve mounted at the inlet of the evaporator and has a bulb attached to the outlet of the evaporator, called a "feeler bulb." This bulb "feels" the temperature of the outlet just the same as the bulb of a thermostat does and if the saturated portion of the evaporator is 20° it controls the valve to keep the evaporator outlet at 28°, with 8° superheat.

If, as the refrigerator gets colder the active part of the evaporator goes down to 18° the feeler bulb controls the T.E. valve to maintain a 26° evaporator outlet — still an 8° difference so that the evaporator is all kept fully active except for that little 8° superheat section. Therefore, the T.E. valve could more descriptively be called a "constant superheat valve," since it maintains a constant 8° superheat.

Most T.E. valves have an arrangement on them for adjustment of the superheat setting, so that if the particular coil on which they are used has a pressure drop more or less than normal the valve can be reset for a smaller or greater superheat.

If the superheat setting is **increased** the percentage of evaporator acting as a drier coil is increased and the evaporator as a whole is made **less** active. Decreasing the superheat setting reduces the superheat section of the coil making more of the coil available for full activity.

Service engineers should not be afraid to readjust the superheat setting of a T.E. valve if the evaporator is not operating at full efficiency (not fully active) or if the refrigerant is overfeeding and the superheating is being done in the suction line itself outside the refrigerator, causing a frosted suction line.

The refrigerant may even be fed so heavily that there is not even opportunity for all of the liquid "Freon-12" to vaporize either in the evaporator or the suction line and as a result liquid "Freon-12" passes into the compressor which it may damage.

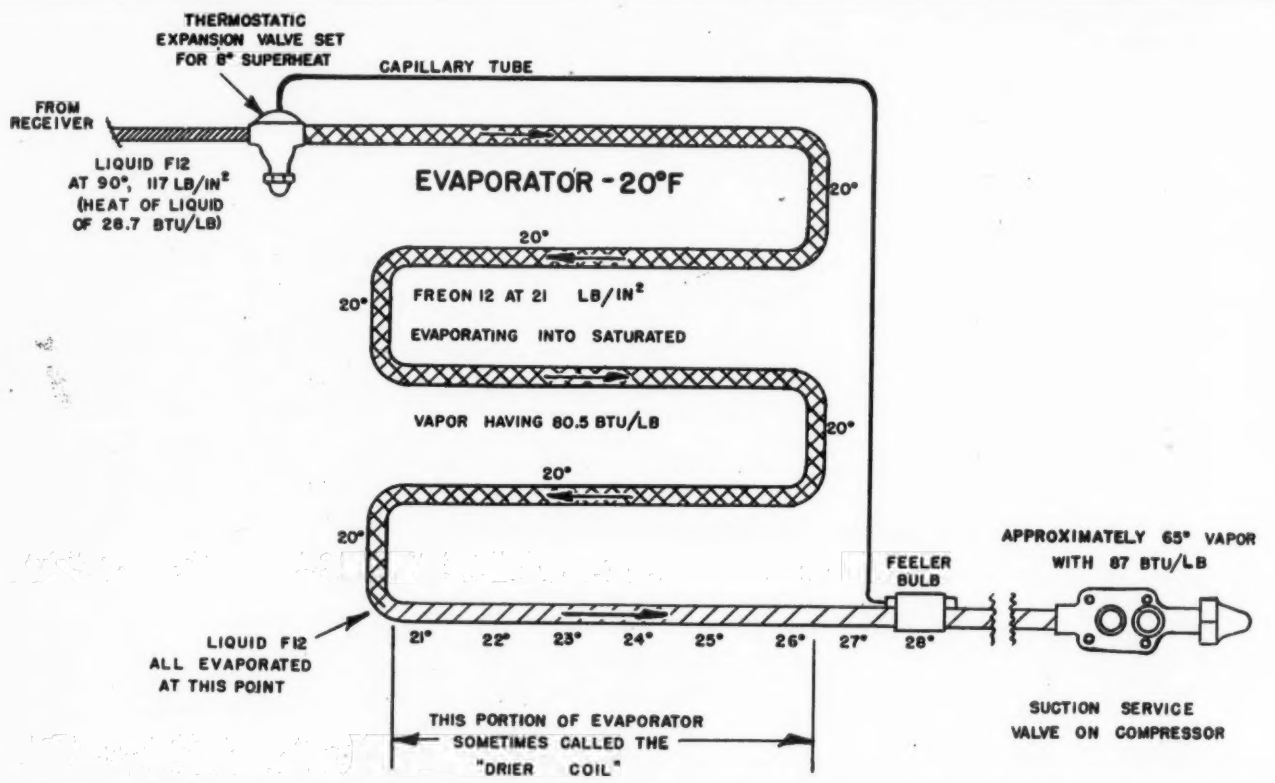
Manufacturers of T.E. valves usually design and adjust their T.E. valves for about 8° superheat, but this is only average as they have no way of knowing what the characteristics of the evaporator are on which their valves are to be used (unless it is a factory-made complete systems—condensing unit matched to the evaporator in which case its manufacturer may use a non-adjustable T.E. valve with a predetermined setting).

The service engineer should not hesitate to adjust the T.E. valve if it needs it; however, he should first make sure that it does need it.

For example, the evaporator being only about one half active may not be due to valve misadjustment, but may instead be due to such conditions as (1) not enough refrigerant in the system, (2) a dirty or sticky valve or stopped-up screen, (3) obstruction in the liquid line, (4) moisture in the valve, or (5) too small or too long a liquid line resulting in excessive flash gas.

In addition to the usual 6° to 10° superheating of the "Freon-12" in the evaporator there is some further superheating of the vapor in the suction line. On ordinary medium-temperature installations it is customary to allow superheating to 65° at the inlet of the compressor in order to keep the temperature of the suction line above the probable dew point temperature of the air so as to prevent condensation.

Heat interchangers, either built into the evaporator or as separate devices in the suction line just beyond the outlet of the evaporator, are widely used, principally to take the place of the "drier coil" part of the evaporator and assure maximum activity of the evaporator and yet maintain a superheated condition.



This diagram illustrates how a thermostatic expansion valve controls the temperature of refrigerant in an evaporator to maintain the proper "superheat" and thus utilize maximum evaporator capacity.

Air Recovery Units In Air Conditioning Systems Must Justify Use In Savings

Sleik Describes Factors In Air Purification Practices To Detroit A.S.H.&V.E. Meeting

By C. Dale Mericle

DETROIT—Air that has been conditioned to the proper temperature and humidity represents a big investment and should not be wasted to the outside atmosphere, declared Henry S. Sleik of W. B. Connor Engineering Corp., New York City, when he addressed the Michigan chapter of the American Society of Heating and Ventilating Engineers at the Rackham Foundation Oct. 11.

Speaking on "The Art of Air Recovery or Air Conditioning's Unique Contribution to the National War Effort," Mr. Sleik described the use of activated carbon to remove gases and vapors from conditioned air so that more air could be repeatedly recirculated with a consequent reduction in the amount of fresh air introduced into the system.

"The problem should be approached from the purely economic viewpoint for most air conditioning systems," Mr. Sleik said. "It costs considerable, both in original equipment and operating costs, to introduce fresh air and condition it. In many instances activated carbon odor absorbers purify the air and permit a considerably smaller system to provide adequate air conditioning."

In engineering and air conditioning system, the inside air load, including the occupancy, is considered as a constant factor which can't be varied, he explained. The outside air load is the variable which determines the cost of a system.

"There are three reasons for introducing outside air into a conditioned space," Mr. Sleik continued, "first, to replace the oxygen content; second, to maintain the static pressure to compensate for loss through leakage; and third, to dilute internal air contaminations.

"Of these three reasons, the first two are negligible. Contrary to accepted theory, the amount of oxygen burned up and replaced by carbon dioxide through breathing is infinitely small and has no effect on ordinary occupancies," he declared. "Only in submarines does this process become of vital importance."

Little to Replace Oxygen

Ordinarily, he added, 5 c.f.m per occupant is required for maintaining the required oxygen level, while 15 to 50 c.f.m. must be used for dilution of contaminated air.

Describing a typical installation, Mr. Sleik told how (and illustrated with slides) activated carbon is placed in an air conditioning system to purify the air.

Granular activated carbon is contained in small cannisters of about four inches O.D., which are constructed of two perforated shells with the carbon contained between them. Cannisters are open at the bottom, but closed at the top so that air is forced from outside the cylinders through the carbon, emerging from the interior bottom opening, he said.

Cannisters are mounted on a manifold plate spaced so that the area between the cannisters is approximately the same as the cross-sectional area of the interior of the cylinder, Mr. Sleik explained. The manifold plate is placed at an angle calculated to reduce progressively the area exposed to incoming air.

The exposed area, incidentally, is roughly the same as that of a typical viscous type air filter, he said, each cylinder usually being rated at 25 c.f.m. capacity.

Not to Replace Filters

Activated carbon odor absorbers are not intended to replace viscous air filters, Mr. Sleik hastened to add. Conventional air filters are placed ahead of the carbon cylinders to remove grease and dust impurities in the air which would greatly impair the efficiency of the carbon should they be permitted to settle on the carbon, he explained.

Resistance to air flow is likewise about the same as the conventional filter, being rated at 0.15 inches of water at 35 to 40 c.f.m., Mr. Sleik said.

The carbon cylinders must be reactivated from time to time as their maximum absorbant capacity is reached, according to Mr. Sleik. The life of a cannister varies, of course, with the type of installation. In extreme cases, such as kitchen installation where heavy odors are absorbed, the life is three or four months. Ordinary industrial air is efficiently handled for six to eight months, factory air, a year, and comfort cooling air, two years.

Reactivating process consists of subjecting the carbon removed from the cannister to steam of 1,000 to 1,200° F. Such a high temperature is necessary, Mr. Sleik explained, to drive off sulphurous gases absorbed by the carbon. These gases come off at about 750° F., he said.

When cannisters are removed from the air conditioning system for reactivation, they are immediately replaced with new or reactivated cannisters. It is general practice, he said, to reactivate a certain number of cannisters at definite intervals, establishing a cycle of reactivation to insure the odor absorber unit's always being at high capacity.

Use In War Plants Cited

Several installations of odor absorbing equipment in war plants were cited by Mr. Sleik, including a Pratt & Whitney factory, the Dodge Chicago factory, Jack & Heintz of Cleveland, Sperry Gyroscope, and Bell Telephone Laboratories.

The Pratt & Whitney installation incorporates automatic air dampers which regulate the amount of air which passes through the carbon cannisters, according to Mr. Sleik.

When the outside air is at an optimum temperature level, automatic dampers permit its introduction into the air conditioning system in greater quantities, and at the same time reduce the amount of air which is recirculated through the odor absorbers. As the temperature of the outside air falls, less outside air is permitted to enter the system, and simultaneously more air is recirculated through the carbon-containing cannisters.

Removes Dangerous Gases

At the Bell Telephone Laboratories secret research work was being conducted for the Navy which involved the use of much benzol. The Connor company was called in to see if something could be done to remove inexpensively, from the air, the dangerous concentration of benzol vapors, Mr. Sleik said.

"The Industrial Hygiene division of the New York State Department of Labor was also vitally interested in this project, for they would not permit the benzol concentration to exceed the allowable maximum of 50 parts in a million."

Odor absorbers were installed and tests conducted independently by both the state and the Connor firm. According to Mr. Sleik, on-the-spot tests by the state, and analysis of the activated carbon in the Connor laboratories both revealed that the cannisters maintained a sufficiently low level of benzol concentration in the air for eight weeks, instead of the four weeks which Connor engineers had originally estimated.

Use of activated carbon for absorbing odors is a comparatively new process, Mr. Sleik declared in tracing its history. Its first application was in gas masks during World War I.

Although air conditioning engineers began in the Twenties to seek some method of removing odors, it was some years before they hit upon activated carbon, according to Mr. Sleik. Early efforts were devoted to the introduction of chemical substances which would decompose or neutralize odors and gases, but the one was dangerous and the other was merely the masking of a bad odor with a good one.

The ideal air conditioning system, from the standpoint of properly conditioning air, probably should consist of viscous filters, activated carbon odor absorbers, electrical precipitating equipment, and bacteria-killing lights, Mr. Sleik said, but the cost would no doubt be prohibitive.

Following Mr. Sleik's talk, A. S. H. V. E. members viewed two color sound movies: du Pont's "New World Through Chemistry," and one on "India."

Chairman of the meeting was Michigan Chapter President S. S. Sanford of the Detroit Edison Co.

Air Conditioning Meets Low Humidity Need In Rubber Gas Tank Work

MISHAWAKA, Ind. — To insure sufficiently low humidity for processing of rubber for self-sealing airplane fuel cell tanks, three Carrier industrial air conditioners have been installed in the United States Rubber Co. plant here. Additional equipment was also installed for other operations.

When nylon is applied to the rubber with paint brushes certain highly volatile ingredients flash off, causing a low surface temperature which would result in "blushing" if the dewpoint of surrounding air was not reduced to a low level. The air conditioners drop the dewpoint to around 55° which is satisfactory.

Also installed were 16 heat diffusers for supplying 100% outside air to spaces with a high concentration of ethylene dichloride, methyl ethyl, ketone, and iso propyl alcohol. In addition 21 ventilating units for exhausting air were installed.

Concentrated vapors in the room of the plant where rubber is cemented to fabric for Army and Navy raincoats made advisable the installation of a spray washer for cooling and ventilating to provide employes health and comfort.

By use of Ruberoid asbestos board ductwork throughout, Carrier engineers claim they saved 78,000 pounds of steel. Even the ejector nozzles in the industrial air conditioners were made of Ruberoid instead of the usual brass.

Conversion of 'Freon' Valves To Methyl Chloride Operation

By F. Y. Carter, Research Laboratory, Detroit Lubricator Co.

To fully appreciate what is involved in using a "Freon-12" valve on a methyl chloride system, one must understand the system of balanced forces that exists in the expansion valve and the relation of this system of forces to the two refrigerants involved.

The superheat setting of a thermostatic expansion valve may be thought of as the balanced condition of all forces in the valve. When the valve is in operation the sum of the forces tending to close the valve is exactly balanced by the sum of the forces tending to open the valve.

Fig. 1 represents an ordinary single diaphragm "Freon" thermostatic expansion valve in operation on a refrigerating system. The valve is adjusted for 10° superheat and as shown, when the feeler bulb which is charged with "Freon" reaches a temperature of 25° F., a vapor pressure of 24½ p.s.i. exists in the power element chamber.

The power element chamber is isolated and is separated from the main system by the diaphragm. The pressure in the power element chamber acts on the movable diaphragm and tends to move it in a direction which would cause it to push the needle open. The spring is adjusted for a force equivalent to 7 p.s.i. and opposes the power element force, tending to push the needle towards the closed position. The suction pressure of 17½ p.s.i. also opposes the power element force, acting on the under side of the diaphragm and tending to move it in a direction which would cause the needle to close.

Thus the power element pressure of 24½ p.s.i. tending to open the valve is exactly balanced by the sum of the suction pressure (17½ p.s.i.) and the spring (7 p.s.i.) tending to close the valve, and we have our system of balanced forces.

As long as the feeler bulb temperature remains at 25° F. and the spring adjustment remains at 7 p.s.i. a suction pressure of 17½ p.s.i. will be required to bring the forces into balance.

Now suppose this refrigerating system is to be converted to methyl chloride and put into operation without changing the expansion valve adjustment. When the feeler bulb reaches a temperature of 25° F. (assuming that it could) a suction pressure of 17½ p.s.i. with methyl chloride is required to bring the valve forces into balance. Referring to the characteristic curve for methyl chloride, this is a suction temperature of 25° F., or the valve is operating with no superheat and will be unable to control the refrigerant flow at the evaporator outlet.

It is now obvious that the superheat will have to be increased, and this is done by increasing the spring force to an equivalent of 13 p.s.i., which allows the suction pressure to fall to 11½ p.s.i. to form the balance of forces within the valve, and the valve is now operating at 10° superheat on the methyl chloride system.

A single diaphragm valve has been considered here because of its comparatively simple system of forces. The same explanation, however, applies to the double element type of valve such as the Detroit No. 673.

The double element type valve is designed for constant superheat operation. When the Detroit No. 673 valve is adjusted for a 10° superheat it will have that superheat at all suction pressures. This is accomplished by having one element of slightly larger area than the other so that when the power element is charged with the refrigerant on which it is to be used the balance of forces will always occur when the saturation temperature of the suction pressure is 10° F. lower than the thermostatic bulb temperature.

However, when a "Freon" valve of this type is used on a methyl chloride system the original relation between the rates of change of the power element pressure and the system pressure is upset and we no longer have a constant superheat at 10° F.

Fig. 2 shows the standard superheat curve of a Detroit No. 673 "Freon" valve and the superheat curve of this same valve when readjusted to operate on a methyl chloride system.

The standard single diaphragm type valve normally has an increasing superheat characteristic as the suction pressure decreases. The power element of a standard "Freon" valve of this type is charged with "Freon," and when it is used on a methyl chloride system we again have the relation between the rates of change of the power element pressure and the system pressure upset.

Fig. 3 shows the standard superheat curve of a Detroit Duraframe "Freon" valve, and the superheat curve of the same valve when readjusted to operate on a methyl chloride system, both adjustments being for a 10° superheat at 25° F. bulb temperature. Within usual operating limits up to 25 lbs. suction pressure the variation in the superheat curves is not too bad. However, an additional increase of a few degrees superheat may be necessary when the valve is operated on methyl chloride.

The foregoing has illustrated theoretically that "Freon" thermostatic expansion valves can be operated on methyl chloride systems. There are some conditions, however, which must be considered and which very materially affect expansion valve operation when the system is converted to methyl chloride.

The expansion valve has approximately twice as much capacity on methyl chloride as on "Freon" under the same conditions. Inasmuch as the capacity of the system will be somewhat near its original capacity after the conversion is made, the expansion valve will tend to operate at half the opening that existed when the system was operating on "Freon."

Practically, this means the valve will operate at one or two degrees lower superheat and consequently will have a slight tendency to flood over. The weight of gas circulated per hour when using methyl chloride is considerably less, this resulting in less pressure drop through the evaporator and gives the effect of lower superheat at the expansion valve.

The amount of oil circulated by the methyl chloride may be different than the amount circulated with "Freon" and as a result the heat transfer from the refrigerant to the evaporator may be different and again affect the manner in which the feeler bulb controls the valve opening.

These may all add up and result in a very bad surging condition when the "Freon" valve is used on a methyl chloride system. Should such a condition occur it will be necessary by experimentation to continue adjusting the expansion valve, and possibly re-locate the feeler bulb

(Concluded on Page 17, Column 1)

Fig. 1 Adjustment of 'Superheat' For 'Freon' and Methyl

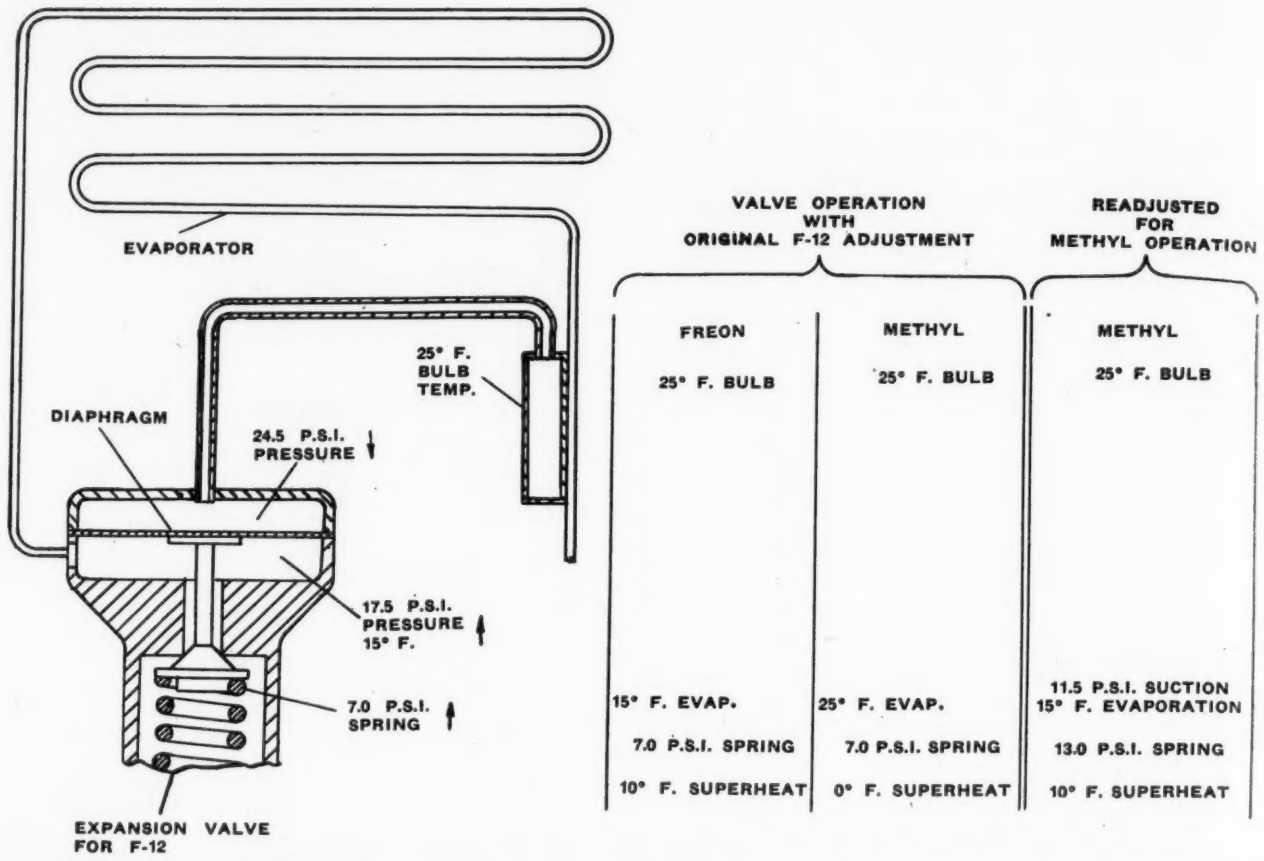


Fig. 2 Superheat Curve of Detroit 673 Valve

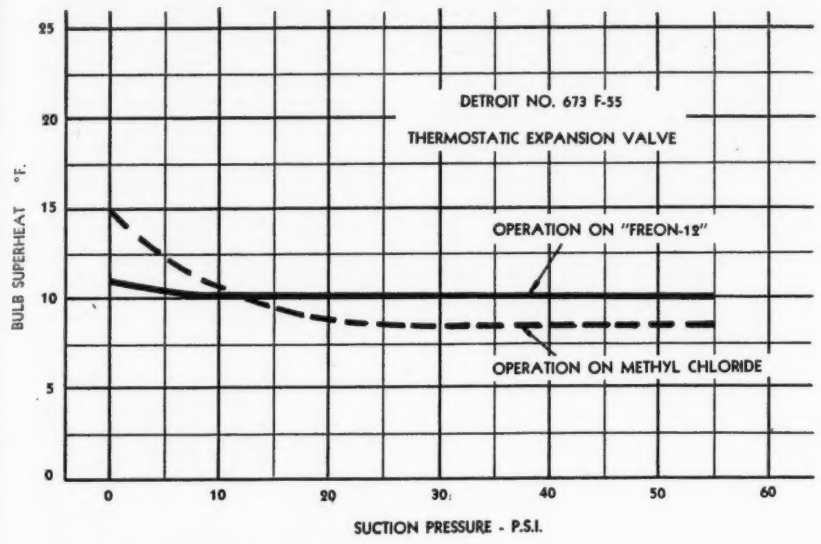
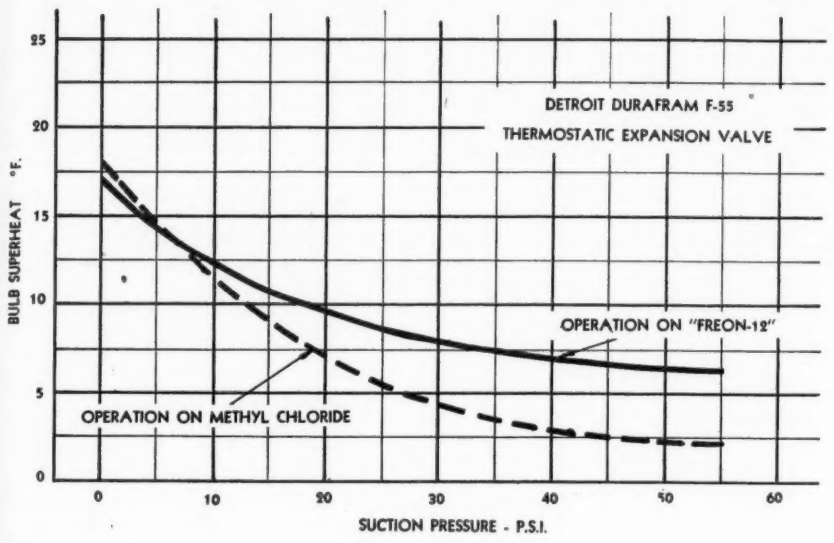


Fig. 3 Superheat Curve of 'Durafram' Valve



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Factors In Changing 'Freon'-Type Valve To Methyl Chloride

(Concluded from Page 16, Column 5)

to obtain better operation.

"Freon" is an easy refrigerant to work with and especially suited for the expansion valve to control, due to its high poundage circulation for a given capacity. Methyl chloride may prove harder to control and there is no assurance that a "Freon" valve will operate satisfactorily on all methyl chloride systems, although a great many successful conversions have taken place and are operating very satisfactorily.

In changing the adjustment of the "Freon" valve to work on methyl chloride it is necessary to change the adjusting spring force by quite a large amount, and it may be found that on some expansion valves the standard adjusting range will not allow the valve to be re-adjusted sufficiently. Should a condition like this arise it can sometimes be overcome by locating the feeler bulb on the evaporator, probably as much as midway between the inlet and outlet.

Normally "Freon" expansion valves would not be recommended for use on methyl chloride systems. The necessity for continued operation, however, is more important at this time than perfect valve operation, and passable operation of "Freon" valves may be obtained after conversion. If every possible effort to make the "Freon" expansion valve operate passably on methyl chloride fails, then the only alternative is to convert to a methyl chloride valve.

Vilter Blast Freezer Described in Bulletin

MILWAUKEE — Vilter Mfg. Co.'s new medium size freezing unit designed to meet the needs of the average locker plant is described in a four-page bulletin, "The New Vilter Frigid Blast Freezer," just published.

The freezer occupies 6½ by 6 feet of floor space and is claimed to reduce handling time and freezing costs.

Camp Wallace Gets New 5-Room Storage Plant For Food Stuffs

CAMP WALLACE, Texas — The Camp Wallace cold storage plant is nearing completion and will be accepted soon for use by the government, according to Lt. Col. A. D. Martin, post engineer.

The plant is a large concrete and frame structure, housing five cold storage rooms with individually controlled temperatures for the preserving and storing of perishable foods used in the camp.

The 15-car capacity building was constructed under private contract and the machinery of its four refrigerating units is already in operation.

"Temperatures in each of the rooms will vary according to the room's use," said Capt. D. H. Spangler, camp veterinary officer, who inspects all meats moved into the vaults for storage. One of the rooms, to be used for storing beef, will be held at a temperature of 10° F. while eggs and vegetables will be stored in 38 to 45° rooms.

Perishable foods for the camp formerly were shipped and stored in the cold storage plant at Fort Crockett necessitating daily trips to Galveston by trucks of the Quartermaster Corps to bring back rations. By constructing the new storage plant here and moving in the food by rail and truck, a large saving in trucking expenditure is expected by camp officials.

Searle Manages Philco Simplex Division Plant

PHILADELPHIA—Lionel M. Searle, for the past year manager of the Monroe Street plant of the Simplex Radio Division of Philco Corp., Sandusky, O., has been named manager of the entire division, it is announced by John Ballantyne, president of Philco Corp.

Mr. Searle joined Philco in 1933 as a mechanical inspector in the factory engineering department, where he assisted in the development of a system for classifying obsolete parts and materials for reuse, which has saved the company many thousands of dollars. From 1935 to 1937 he was cost estimator for all Philco products. In 1937 Mr. Searle went to Sandusky as assistant plant manager, and in 1941 he was named manager of the Monroe Street plant.

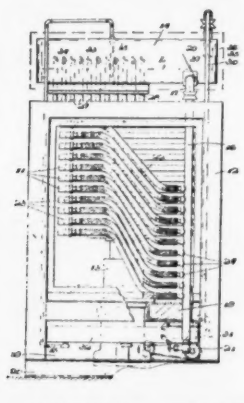
ABSORPTION REFRIGERATION ENGINEER WANTED

Must be thoroughly familiar with absorption type machine and experience in design and development research on post-war products. Applicants must qualify under War Manpower Stabilization Plan. Our employees know of this ad. Write complete experience in first letter to Box 1481, Air Conditioning & Refrigeration News.

PATENTS

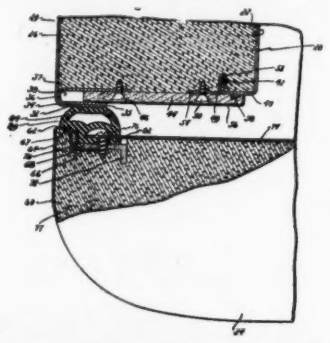
Weeks of Sept. 21 & 28

2,329,746. REFRIGERATING APPARATUS. Sidney M. Davison, Annisquam, Mass., assignor to General Foods Corp., New York, N. Y., a corporation of Delaware. Application April 3, 1940, Serial No. 327,717. 23 Claims. (Cl. 62—114).



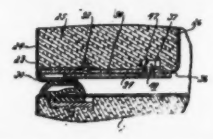
1. In a refrigerating apparatus of the type embodying a plurality of hollow refrigerated elements mounted in parallel relation to one another and adapted to freeze comestibles while the latter are in heat exchanging contact there with, a source of volatile liquid refrigerant, means providing a path of flow for said liquid refrigerant by gravity from said source to said elements and comprising a separate conduit for delivering refrigerant into each of said elements, and additional means communicating with the interior of each of said elements through which vapor generated within the latter is adapted to be discharged therefrom, the lowest point in each of said conduits being sufficiently far below its associated element to provide a negative liquid head effective to prevent the backflow of vapor from said associated element therethrough.

2,329,753. REFRIGERATING APPARATUS. Martin J. Goulooze, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Nov. 9, 1940, Serial No. 365,137. 2 Claims. (Cl. 20—35).



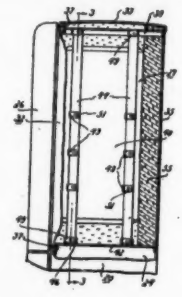
1. A door for a refrigerator cabinet comprising a sheet metal cover bent to form at least the front and side walls of the door and having a portion formed at right angles to the side walls to provide a narrow inner face for the door, the cover then being bent rearwardly to form a portion substantially parallel with the side walls and terminating with an inset flange portion spaced from said front wall and spaced inwardly of the inner face and substantially parallel with said inner face, a reinforcing member in the form of a Z in cross section secured in engagement with said rearwardly bent portion and said flange portion and a cover panel secured to said Z-shaped reinforcing member to serve as the major portion of the rear side of the door.

2,329,754. REFRIGERATING APPARATUS. Martin J. Goulooze, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application May 9, 1941, Serial No. 392,613. 1 Claim. (Cl. 220—9).



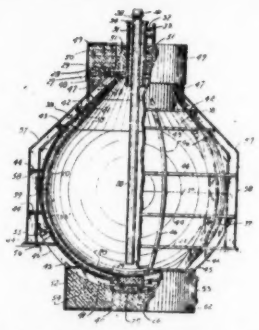
A refrigerator cabinet construction comprising inner and outer metallic walls, the edges of said walls terminating in spaced apart opposed relation, the edge of said outer wall having a pocket formed rearwardly of its face portion, a breaker strip having one edge extending into said pocket and the other edge thereof extending over the edge of the inner wall, a second breaker strip extending across the front face of the first breaker strip with one edge located in said pocket and the opposite edge extending across the edge of the inner wall and means carried by said second named breaker strip extending through an opening in the first named breaker strip and an opening in said inner wall for locking said breaker strips to said inner wall.

2,329,755. REFRIGERATING APPARATUS. Martin J. Goulooze, Grand Rapids, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application July 18, 1941, Serial No. 402,900. Application July 18, 1941, Serial No. 402,900. 2 Claims. (Cl. 220—15).



1. Cabinet construction comprising an outer casing, an inner casing disposed within said outer casing in spaced apart relationship with the front walls of said casings being arranged on substantially the same plane and terminating in spaced apart relationship, horizontally disposed hangers positioned above and below said inner casing, means securing said hangers to said outer casing, vertical members extending parallel to the side walls of said inner casing, means securing said vertical members to said hangers, and means securing said vertical members to said inner casing.

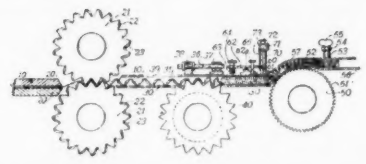
2,329,765 LOW TEMPERATURE STORAGE TANK. James O. Jackson, Crafton, and Howell C. Cooper, Sewickley, Pa. Application Nov. 12, 1941, Serial No. 418,734. 11 Claims. (Cl. 220—9).



1. An insulated container comprising inner and outer metal shells having substantially spherical spaced apart lower portions and upper portions which are attached to said lower portions and which converge to a common line of contact, said upper portions being substantially conical at their lines of attachment to their lower portions and substantially tangent thereto, said outer shell being reinforced by stiffening means adapted to enable it to support the weight and contents of said inner shell, said stiffering means being attached to the upper extremities of said shells at said common line of contact.

2,329,789. APPARATUS FOR MAKING HEAT-EXCHANGE ELEMENTS. Harry E. Schank and Paul R. Seemiller, Detroit, Mich., assignors to McCord Radiator & Mfg. Co., Detroit, Mich., a corporation of Maine. Original application Nov. 16, 1939, Serial No. 304,656. Divided and this application July 11, 1941, Serial No. 401,896. 4 Claims. (Cl. 153—68).

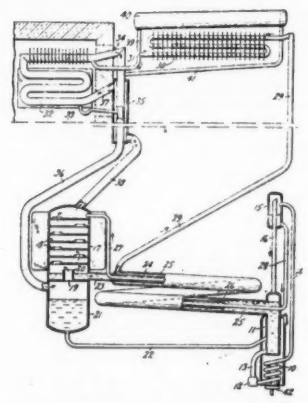
1. Apparatus for forming reverse bends in a metal strip comprising driven forming rollers having intermeshing teeth with the faces of each tooth making relatively wide angles with each other, said toothed rollers engaging opposite sides of said strip to fold said strip transversely as it moves between them, means for guiding said strip between said rollers, other guiding means for limiting motion of the folded strip perpendicularly to its path of travel after it leaves said rollers, said last-named guiding means having an opening in one side thereof, a toothed feeding roller projecting through said opening and engaging said folds for feeding said folded strip endwise through said guiding means, means associated with said guiding means for retarding the motion of said folded strip and thereby compressing said folds, a third rotatable toothed roller engaging the folds at one side of said folded strip beyond said guiding means for controlling the separa-



tion of the bends of said folds at one side of said folded strip, and stationary means engaging said folds at the other side of the folded strip opposite said last-named toothed roller for controlling the separation of the folds at the other side of said folded strip.

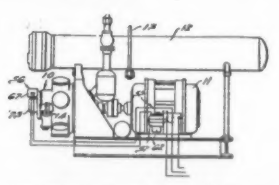
2. In a machine for progressively forming a long folded strip of metal into loosely spaced substantially parallel folds, means for moving the folded strip endwise of the strip, means for compressing the folds into closed-spaced relation, a spacing roller having teeth engaging the folds at one side of the moving folded strip, and a stationary guide frictionally engaging the folds at the other side of the moving folded strip to guide the strip about said roller and then away from said roller.

2,329,863. REFRIGERATION. Albert R. Thomas, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Jan. 4, 1940, Serial No. 312,315. 7 Claims. (Cl. 62—119.5).



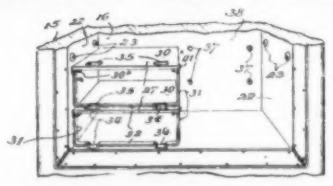
1. An absorption refrigeration system having an evaporator and an absorber connected in a circuit for inert gas, a generator, a first conduit for conducting weak absorption liquid from said generator to said absorber, a second conduit for conducting strong absorption liquid from said absorber to said generator, the strong absorption liquid flowing by gravity in said second conduit and having two surface levels at different elevations, a third conduit for conducting generator vapor, said three conduits being in heat exchange relation at a level intermediate said liquid surface levels, and a liquid holder so connected in said gas circuit as to hold a substantially stagnant quantity of absorption liquid at a level below the upper of said surface levels and in contact with gas flowing from said evaporator to said absorber.

2,329,931. COMPRESSOR CONTROL MEANS. Charles R. Neeson, Dayton, Ohio, assignor to Chrysler Corp., Detroit, Mich., a corporation of Delaware. Application Nov. 26, 1941, Serial No. 420,559. 10 Claims. (Cl. 230—24).



1. A compressor comprising a prime mover, a cyclically operating compressing means driven by said prime mover and adapted normally to compress a gaseous medium at each cycle of operation; means to vary the compressing capacity of said compressing means from no capacity to full capacity automatically in response to a condition of the gaseous medium including fluid pressure creating means effective simultaneously with cyclical operation of said compressing means, fluid pressure operated means for effecting the loading of said compressing means to full capacity when connected to said fluid pressure creating means, and spring means for effecting the unloading of the compressing means to no capacity when said fluid pressure operated means is disconnected from said fluid pressure creating means; and a time delay mechanism preventing the application of fluid pressure created by said fluid pressure creating means to said fluid pressure operated means until a predetermined length of time after commencement of cyclical operation of said compressing means to delay the loading of said compressing means for sufficient time to permit said prime mover to attain operating speed.

2,330,044. STORAGE PAN FOR REFRIGERATORS. Donald H. Gaston, Evansville Ind., assignor to Sunbeam



Electric Mfg. Co., Evansville, Ind., a corporation of Indiana. Application March 7,

(Concluded on Page 19, Column 2)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, $2.50. Three consecutive insertions, 12½¢ per word; minimum charge, $6.25.

RATES for all other classifications, 10¢ per word, minimum charge, $5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, $12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

EQUIPMENT FOR SALE

65 CU. FT. REFRIGERATORS, reach-in style with five (5) solid doors, natural oak front, white enameled interior, completely self-contained with ½ HP. condensing unit and blower coil installed ready to attach to 110 volt electric service. Brand-new in original crates available for immediate shipment without priority to dealers and distributors. $415.00 net. F.O.B. midwest shipping point, 25% with order, balance C.O.D. or S.D. B/L. J. GEO. FISCHER & SONS, INC., SAGINAW, MICHIGAN, SINCE 1889.

FOR SALE: Iceberg water cooler manufacturing business, complete with all designs, special tools, patents and Good Will. An especially good buy under present conditions. Correspondence solicited. THE ICEBERG CORP., Gardner, Mass.

NEW HIGH AND LOW Pressure C-H Switches, $8.75. New high pressure or air G-H switches, $4.90. Frigidaire used model 'K' compressors, $7.00. Complete ⅓ H.P. Frigidaire model 'K', "as is," less motor, $15.00. F.O.B. New York. Write for our surplus list. EDISON COOLING CORP., Dept. R., 319 E. 149th Street, New York 51, N. Y.

POSITIONS AVAILABLE

MECHANICAL DRAFTSMEN needed: Large internationally known machinery manufacturer requires services of mechanical draftsmen in engineering division. These men must be conversant with air conditioning refrigeration equipment, metal construction or electrical control wiring. Positions offer permanency with opportunity afforded by expanding operation. Write stating qualifications, age, nationality. All replies will be held strictly confidential. Box 1484, Air Conditioning & Refrigeration News.

DIVISIONAL SALES MANAGER to handle refrigeration accessory sales from Western factory. Permanent position to right party. Write giving experience, references and age. Box 1478, Air Conditioning & Refrigeration News.

DRAFTSMAN: A large internationally known machinery manufacturer requires the services of a design engineer for air conditioning and refrigeration equipment. The man must have particular experience in air handling equipment, heat transfer surface, and assembly design. This position offers permanency with opportunity afforded by expanding operation. Write stating qualifications, age, nationality. All replies will be held strictly confidential. Box 1483, Air Conditioning & Refrigeration News.

BEST OPPORTUNITY in all America both during and after the war. San Diego, California offers you everything worth living for. We need good service men. Will pay top wages, time and a half and double time for over 48 hours plus liberal commissions. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego 1, Calif.

POSITIONS WANTED

TWO FIRST CLASS commercial refrigeration service men desire permanent position with well established firm in south or south-central states. At present working for strictly commercial concern in city of over 100,000 on both high and low pressure service and installation. Please state salary and working conditions in first letter. Box 1482, Air Conditioning & Refrigeration News.

REFRIGERATION SALES and engineering executive: Have large number of government agency contacts and thorough knowledge of their needs and engineering requirements. Have obtained sufficient essential orders during 1942 and 1943 for specialized types of fabricated refrigeration and temperature control units to fill medium sized plant. Speciality is contacting the numerous branches and divisions of the armed forces to determine their needs, then designing and producing the equipment required. Prefer connection with company engaged in refrigeration, metal fabrication and assembly work. However, have available high caliber specialists for sales, engineering and production departments, if other type companies interested. Box 1479, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED: Used condensing units and cooling coils for air conditioning. Let us know what you have. Can also use room coolers and self contained equipment. BETLEM HEATING CO., 1926 East Ave., Rochester, N. Y.

WANTED TO BUY—Complete refrigeration business or any amount of surplus refrigeration parts and motors. Box 1477, Air Conditioning & Refrigeration News.

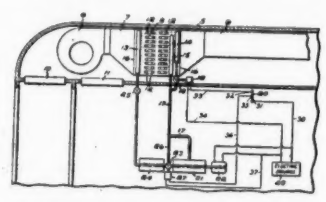
Patents (Cont.)

(Concluded from Page 18, Column 4)

1940, Serial No. 322,648. 10 Claims. (Cl. 312—150).

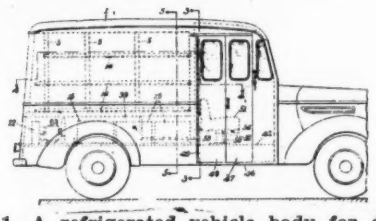
5. In the combination of a refrigerator food compartment and a pair of separate like pan-and-cover units therein, each of length approximating the depth of the compartment and of width not over half the width of the compartment, and wherein the units are adapted to be placed alternatively side by side upon the floor or shelf of the compartment or in superposed relation with one unit upon the floor or shelf and the other upon the one unit,—the improvement which consists in cooperating elements carried by the units rearwardly thereof and by the back wall of the compartment at such positions thereof as to be engaged by the unit-carried elements when the units are in said alternate positions, whereby releasably to fix the units in such positions.

2,330,175. REFRIGERATION APPARATUS FOR AIR CONDITIONING SYSTEMS. Milton E. Hanson, Haddonfield, N. J., assignor to B. F. Sturtevant Co., Boston, Mass. Application Oct. 9, 1941, Serial No. 414,314. 2 Claims. (Cl. 62—6).



1. Refrigeration apparatus for air cooling comprising a nevaporator having air contacting tubes placed in superimposed parallel rows, said tubes being divided into two groups, tubes of said groups being arranged in alternate rows, extended surface fins in contact with all of said tubes, a suction header connected to the tubes of one of said groups, a second suction header connected to the tubes of the other of said groups, means including a compressor for supplying refrigerant to all of said tubes, suction lines connecting said headers and said compressor, a valve in one of said lines for preventing the flow of refrigerant through the tubes of one of said groups, and means responsive to a change in condition brought about by the evaporation of refrigerant in said evaporator for actuating said valve.

2,330,339. REFRIGERATED VEHICLE BODY. Leonel A. De More, Oak Park, Ill., assignor to Batavia Body Co., Inc., Batavia, Ill., a corporation of Illinois. Application Oct. 19, 1939, Serial No. 300,217. 6 Claims. (Cl. 62—17).



1. A refrigerated vehicle body for delivery purposes, comprising heat insulated walls enclosing a refrigerated receptacle, a plurality of separated upright members in said receptacle, arranged in separated planes extending along the body, supporting guides on the opposed upright members, upon which the containers for the cooled material to be delivered are received, the space between the separated upright members being open to permit circulation of cold air, a door at one end of said corridor for loading the containers therein, and a plurality of separated doors at the othe rend of said corridor for removing the containers for the cooled material therefrom as they are to be delivered, said corridor being substantially the same width as the containers, so that when a front door is opened, the containers fo rthe cooled material close the opening to prevent the cold air from falling out.

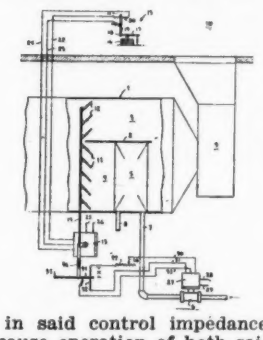
2,330,525. CORROSION INHIBITOR. James E. Shields, Niagara Falls, N. Y., assignor to Alox Corporation, New York, N. Y., a corporation of New York. No Drawing. Original application June 16, 1941, Serial No. 398,337. Divided and this application Sept. 29, 1941, Serial No. 412,911. 5 Claims. (Cl. 260—632.5).

1. Method of preventing the corrosive action of an aqueous alcohol on an aluminum or aluminum alloy container thereof, which consists in associating with the alcohol in such container a relatively small amount, of the order of 0.5% by weight, of an alcohol-soluble and water-soluble esterified product formed by esterifying with a relatively low molecular weight aliphatic alcohol the esterifiable constituents of a steam distillate of an oxidation reaction mixture produced by subjecting a normally liquid petroleum hydrocarbon mixture to controlled liquid-phase partial oxidation, which esterified product consists essentially of alkyl esters of a mixture of substantially saturated aliphatic carboxylic acids having an average neutralization number of 330, an average saponification number of 390 and a mean molecular weight of 170.

4. An aqueous alcohol containing a relatively small amount, of the order of 0.5% by weight, of an alcohol-soluble and water-soluble composition consisting predominantly of lower alkyl esters of a mixture of substantially saturated aliphatic carboxylic acids having an average neutralization number of 330, an average saponification number of 390 and a mean molecular weight of 170, said acids being derived from a normally liquid petroleum fraction by liquid-phase partial oxidation.

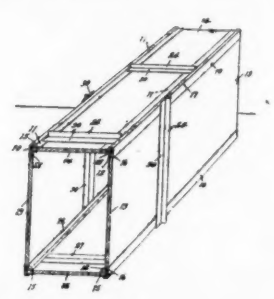
2,330,725. AIR CONDITIONING SYSTEM. William L. McGrath, Philadelphia, Pa., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application June 16, 1941, Serial No. 398,307. 14 Claims. (Cl. 236—13).

14. In combination, a first regulating device, a second regulating device, separate electrically operating power means for positioning said regulating devices, means including variable impedance control means associated with said power means operable to graduatingly position each of said power means throughout its complete range of movement, and adjustable impedance means associated with at least one of said power means operable to maintain one of said power means stationary while the other of said power means is operated through a part of its range of movement upon a predetermined



change in said control impedance means and to cause operation of both said power means upon further change in said control impedance means, said adjustable impedance means determining the amount of movement of said other power means which will take place before said one of the power means begins moving upon change in the control impedance means.

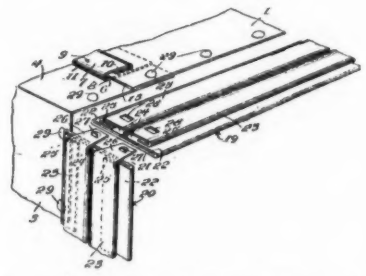
2,330,763. AIR DUCT ASSEMBLY. Frank J. Townsend, Pelham Manor, N. Y. Application Dec. 8, 1942, Serial No. 468,282. 11 Claims. (Cl. 138—78).



2. An air duct for heating, ventilating or air conditioning systems, comprising non-metallic boards for the top, bottom and sides, in combination with metal slide corners adapted to lock the longitudinal edges of the boards, said corners each comprising complemental metal strips having return bends adapted to interlock when the boards are slid longitudinally with relation to each other, the strip on one of the boards being adapted to receive the other board between it and the edge of its own board.

11. A fitting for an air duct for heating, ventilating or air-conditioning systems, in which the top, bottom and sides of the duct are made of non-metallic boards, comprising a doubled metal strip with its main portion lying substantially in the plane of an edge of one of the boards and projecting to one side of said edge, one leg of said fitting being adapted to lie against one face of the board and the other leg being adapted to lie against the other face of the board, as and for the purposes described.

2,330,769. DUCT FOR AIR CONDITIONING SYSTEMS. Henry E. Wichner, Brookfield Township, Trumbull County, Ohio. Application Sept. 3, 1941, Serial No. 409,427. 1 Claim. (Cl. 285—201).



In a duct including sections, locking cleats for detachably securing the sections to each other, each cleat being formed from a strip folded reversely along its length to provide a body and a pair of inner ribs engaging the outer face of the body, outer ribs formed on the inner ribs and overlying the same to provide channels receiving the edge portions of the sections, tongues formed on the outer ribs and mounted in the channels in contact with the outer faces of the sections, substantially semicircular locking lugs formed on the sections and mounted in the channels in edge to edge contact with the tongues, the outer ribs of certain strips having slots adjacent the ends thereof, ears formed on the ends of the outer ribs of the remaining strips and mounted in the channels of companion strips between the tongues and outer ribs, and locking lugs formed on the ears and mounted in the slots for securing the cleats to each other.

Refrigeration Men Speak At Meeting on Research

CHICAGO—Trends and problems in industrial research in times of war and peace were discussed at the meeting here early this month of the Industrial Research Institute, of which Dr. W. R. Hainsworth, vice president of Servel, Inc. in charge of engineering, is chairman.

Several men who had a prominent place on the program are well-known to the refrigeration industry. Conference leaders at the session on "Profits From Research in Relation to Research Expenditures" included R. W. Ayers, Director, Development and Research, Sunbeam Electric Mfg. Co., Evansville; and R. S. Taylor, Chief Engineer, Servel, Inc.

Increased Use of Wood In War Goods To Cut Supply For Furniture

CHICAGO—Increased use of wood in war materials will force a further curtailment of furniture production this year predicted Henry A. Dinegar, director of the durable goods and products division of OCR, in a talk at the fifteenth annual meeting of the National Association of Furniture Manufacturers held here recently.

Total wood available will approximate 60% of the amount used in 1941 and 1942, and only 10 to 15% fewer units will be made, warned Mr. Dinegar.

Shortages of finishing materials are complicating production, even though the furniture industry has adjusted itself to a lack of steel, he said, adding that the stringency in upholstery materials will continue and supplies of fiberboard shipping containers are short.

Estimates that 1,363,000 families intend to buy both living room and bedroom furniture after the war; 1,735,000 families, dining room furniture; 1,575,000 families, rugs and carpets; and 1,470,000 families, linoleum were made by Dr. Albert Haring, professor of marketing, Indiana University, and president of the American Marketing Assn.

Program Given For French Lick Meeting

(Concluded from Page 1, Column 3)

eration parts likely to be changed radically in 1944?

4. Will manufacturers' schedules make it possible in 1944 to render improved deliveries to jobbers for stock or repair and maintenance requirements?

5. How can the Industry Advisory Committee appointed by WPB secure greater industry cooperation?

The Rema meeting will be held on Thursday morning, Oct. 28. Papers will be presented, to be followed by round-table discussions. Program for it is as follows:

Meeting called to order, R. H. Luscombe, president, Rema.

Our association's financial condition, J. A. Strachan, The Weatherhead Co., treasurer, Rema.

"Prospects on the Continuation of War Production," A. B. Schellenberg, Alco Valve Co., vice president, Rema.

"The Markets of the Future," K. M. Newcum, Superior Valve & Fittings Co., chairman, R.S.E.S. Relations Committee.

"Post-War Planning," George R. Allen, Mueller Brass Co., chairman, Post-War Planning Committee.

"(a) Distribution," B. J. Scholl, Brunner Mfg. Co.

"(b) Jobbers Relations," J. W. Krall, Detroit Lubricator Co., chairman, Jobbers Relations Committee.

"(c) Watch Credits," J. W. Baillie, Detroit Lubricator Co., chairman, Credit Committee.

"Will Manufacturers Face 1944 With Less or More Materials for Refrigeration Equipment and parts?" Frederick Smith, chief, Special Equipment Branch, General Industrial Equipment Division, War Production Board.

On Thursday afternoon the Rema members will hold product group meetings.

At their morning session on Thursday, Oct. 28 the National Refrigeration Supply Jobbers will first hear from Sterling Smith on government

H. W. Small, committee chairman, will report on "Postwar Jobbers and Manufacturers Relations."

A symposium on "Advantages of Local Group Meetings," and round-table discussions on (1) P-126 and L-38 orders; (2) Sale of "Freon-12" under Order M-28; (3) Use of WPB-547; and (4) Miscellaneous will also feature the N.R.S.J.A. session.

Complete program for the jobber's meeting is as follows:

9:00 a.m. meeting called to order, Harry Alter, president.

"Latest Information Regarding Government Regulations Affecting the Refrigeration Industry," Sterling F. Smith, chief, Refrigeration and Air Conditioning Section, WPB.

"Postwar Jobbers and Manufacturers Relations (Committee Report)," H. W. Small, chairman.

Symposium: "Advantages of Local Group Meetings," C. E. Borden, coordinator; Irving J. Fajans, Otto A. Friemel.

Round-Table Discussion, Harry Alter, moderator.

1. P-126 and L-38.
2. Sale of Freon Under M-28.
3. Use of WPB-547 (PD-1X).
4. Miscellaneous.

Report of president.
Report of executive secretary.
Report of nominating committee.
Election of directors.
Report of Resolutions Committee.
Unfinished business.
New business.
Meeting of directors to elect officers.
Announcements.

J. W. COWAN
Recently elected vice president of Ad. Auriema, Inc., export firm, he has traveled widely.

'One Set of Price Rules Per Business' Is Plan

WASHINGTON, D. C.—A simplified method which will permit suppliers of services to obtain authorization to price all their services under one of six applicable regulations has been announced by OPA.

Affected by the action are suppliers of a service or services covered by two or more of the following regulations:

General Maximum Price Regulation.

Maximum Price Regulation 134 (Construction and Road Maintenance Equipment and Rental Prices and Operating or Service Charges).

Maximum Price Regulation 136 (Machines and Parts and Machinery Services).

Maximum Price Regulation 165 (Services).

Maximum Price Regulation 246 (Manufacturers' and Wholesale Prices for Farm Equipment).

Maximum Price Regulation 251 (Construction and Maintenance Services and Sales of Building and Industrial Equipment, and Materials).

Suppliers whose services are covered by two or more of the regulations listed above may apply for OPA, Washington, D. C., permission to price all those services under one of the regulations. The action was taken for the convenience of suppliers since some of the services are so similar that suppliers had difficulty in determining which regulation was applicable.

In addition to allowing suppliers of services covered by the listed regulations to price under one of the measures, applications for adjustment of prices for one of the services may now be processed under one regulation.

Suppliers must apply to OPA for the authorization. The application must set forth:

(1) A description of the services supplied by the applicant.

(2) The price regulations applicable to the applicant's services.

(3) The price regulation which is applicable to the bulk of the applicant's services.

(4) The price regulation under which the applicant desires to determine the maximum prices for all services supplied by him which are subject to the six regulations.